

TA-F650ESD

SERVICE MANUAL

*Canadian Model
AEP Model
UK Model*



SPECIFICATIONS

Amplifier section

Item	Condition		Data
Continuous RMS power output (both channels driven simultaneously)	4 ohms, 20 Hz-20 kHz THD 0.008%	EXCEPT AEP model	120 W + 120 W (THD 0.01%) (DIN: 175 W + 175 W)
	6 ohms, 20 Hz-20 kHz THD 0.006%	EXCEPT AEP model	100 W + 100 W (DIN: 140 W + 140 W)
		AEP model	95 W + 95 W (DIN: 120 W + 120 W)
	8 ohms, 20 Hz-20 kHz THD 0.004%	EXCEPT AEP model	90 W + 90 W (DIN: 115 W + 115 W)
		AEP model	80 W + 80 W (DIN: 100 W + 100 W)
Power band width (IHF)	8 ohms, THD 0.02%		10 Hz - 100 kHz at 45 W
Dynamic headroom ('78 IHF)	4 ohms		2 dB
	8 ohms		1.2 dB
Total harmonic distortion	8 ohms, at 10 watt output		0.003%
Intermodulation (IM) distortion 60 Hz: 7 kHz = 4:1	4 ohm, at rated output		0.008%
	6 ohms at rated output		0.006%
	8 ohms at rated output		0.004%
Damping factor	8 ohms, 1 kHz		100
Residual noise	network A		less than 90µV
Frequency response	PHONO MM		R/IAA equalization curve ±0.2 dB
	TUNER, CD, TAPE 1, 2, 3, DIRECT IN		2 Hz - 200 kHz $\pm 0_{-3}$ dB
Input sensitivity	PHONO	MC	0.17 mV, 100 ohms.
		MM	2.5 mV, 50 kohms
	TUNER, CD, DIRECT IN, TAPE 1, 2, 3 ADAPTOR IN		150 mV, 20 kohms

— Continued on page 2 —



INTEGRATED STEREO AMPLIFIER
SONY®

Item	Condition		Data
S/N (network)	PHONO	MC	77 (0.5mV)
		MM	95 (5.0mV)
*78 (IHF)	TUNER, CD, DIRECT IN, TAPE 1, 2, 3 ADAPTOR IN		108 (150mV)
Output voltage impedance	REC OUT 1, 2, 3 ADAPTOR OUT		150 mV, 1 kohm
	HEADPHONES		25 miliwatts (at 8 ohms) Accepts low and high impedance headphones.
Tone controls	BASS, at 100 Hz		±6.5 dB (turnover freq. 400 Hz)
	TREBLE, at 10 kHz		±6 dB (freq. 5 kHz)
SUBSONIC filter	—		6 dB/octave attenuation below 15Hz

DA converter section

Item	Condition	Data
Input sensitivity	DIGITAL COAXIAL IN	0.5 Vp-p, ±20%, 75 ohms
	DIGITAL OPTICAL IN 1, 2	TOSLINK
Output voltage impedance	DIGITAL OPTICAL 2 REC OUT	TOSLINK
Output voltage	DA converter	2 V

General

System Preamplifier section: Low-noise high gain NFB type equalizer amplifier, passive type direct tone control
Power amplifier section: Pure-complementary SEPP power amplifier

Power requirements

Canadian model: 120V AC, 50Hz
AEP, West Germany model: 220V AC, 50Hz
UK model: 240 V AC, 50 Hz

Power consumption

Canadian model	520 VA
AEP model	210 W
UK model	620 W
West Germany model	330 W

AC outlet

Canadian model	2 switched, 1 unswitched, 100 watts max. each
AEP, UK, West Germany model	—

Dimensions

Approx. 430 x 150 x 390 mm (w/h/d)
(18 1/2 x 5 7/8 x 15 3/8 inches)

Weight

Approx. 11.8 kg (26 lbs 1 oz) net

Design and specifications subject to change without notice.

Note

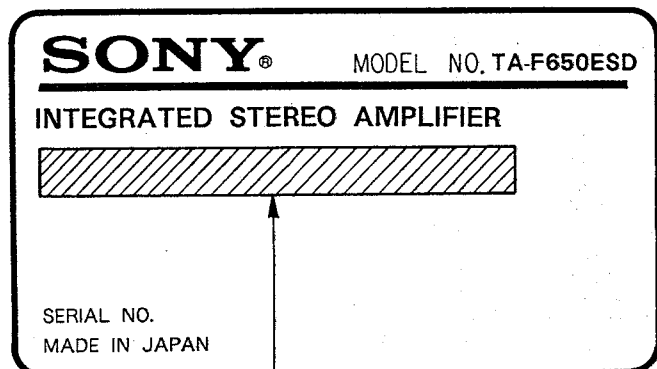
This appliance conforms with EEC directive 87/308/EEC regarding interference suppression.

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MODEL IDENTIFICATION

—Specification Label—



AEP, West Germany Model: AC: 220V~50/60Hz

UK Model: AC: 240V~50/60Hz

Canadian Model: AC: 120V 60Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK OR DOTTED LINE WITH MARK ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

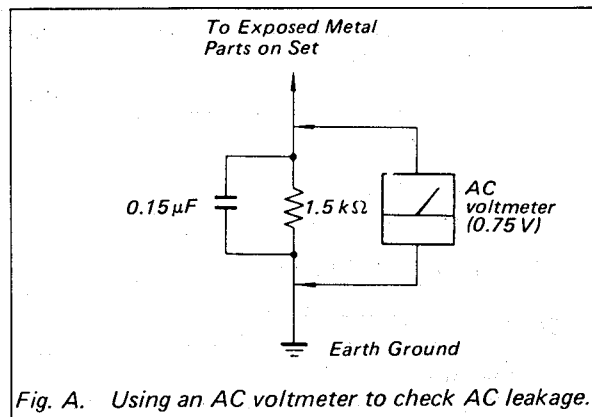
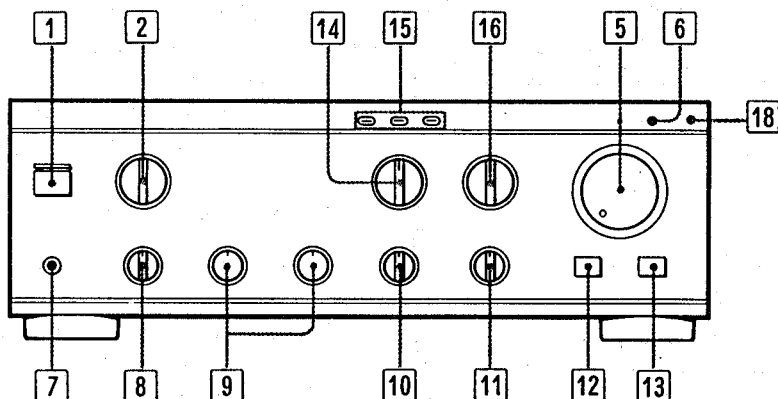


Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1 GENERAL

1-1. PARTS IDENTIFICATION

This section is extracted from instruction manual.



1 POWER switch and power/standby indicator

Immediately after turning ON the power, the standby indicator lights in red as the built-in muting circuit activates.

When the amplifier stays in a stable operating condition, the indicator lights in green.

The indicator lights in red when the unit detects shorting of circuit of the speaker outputs or in case of short-circuit of the inputs of DC components.

In such a case, disconnect the power source and check the connected components and speaker systems.

2 SPEAKERS selector

Select speaker system A or B, or both.

For headphone monitoring only, set the selector to OFF.

5 ATTENUATOR knob

Regulates the sound level.

6 MUTING switch and indicator

Generally, keep the switch released (OFF).

Depress the switch to reduce the sound level by 20 dB. (Output voltage becomes 1/10.)

7 HEADPHONES jack (stereo phone jack)

8 MODE selector

STEREO: For listening to a stereo program.

MONO: For listening to a monaural program.

9 BASS and TREBLE controls

10 REC OUT SELECTOR

Selects the program source sent to the REC OUT jacks (rear panel).

When set to DIGITAL, the selection is made with the DIGITAL INPUT SELECTOR.

11 BALANCE control

Controls the sound level of left and right speakers.

12 SOURCE DIRECT switch and indicator

Depress the switch. The red indicator lights and the circuits of the tone control, subsonic filter switch, balance control and mode switch are disengaged without regard to the setting of the switches.

13 CARTRIDGE selector

Set the selector according to your cartridge.

MM: For moving-magnet type cartridge

MC: For moving-coil type cartridge

14 DIGITAL INPUT SELECTOR

Selects the desired digital program source. When set to ANALOG, selection is made with the ANALOG INPUT SELECTOR.

15 SAMPLING FREQ (frequency) indicator

When a digital signal is being input correctly, the sampling frequency of the signal is displayed (44.1 kHz is displayed when CD player is being played).

The indicator lights in a second after the DIGITAL INPUT is selected and the program source starts at the same time.

16 ANALOG INPUT SELECTOR

Selects the desired analog program source. The selection is made only when the DIGITAL INPUT SELECTOR is set to ANALOG.

18 SUBSONIC filter switch

Depress the switch to reduce unwanted noise components of less than 15 Hz, which cause modulation noise.

SECTION 2
ADJUSTMENTS

PRECAUTIONS

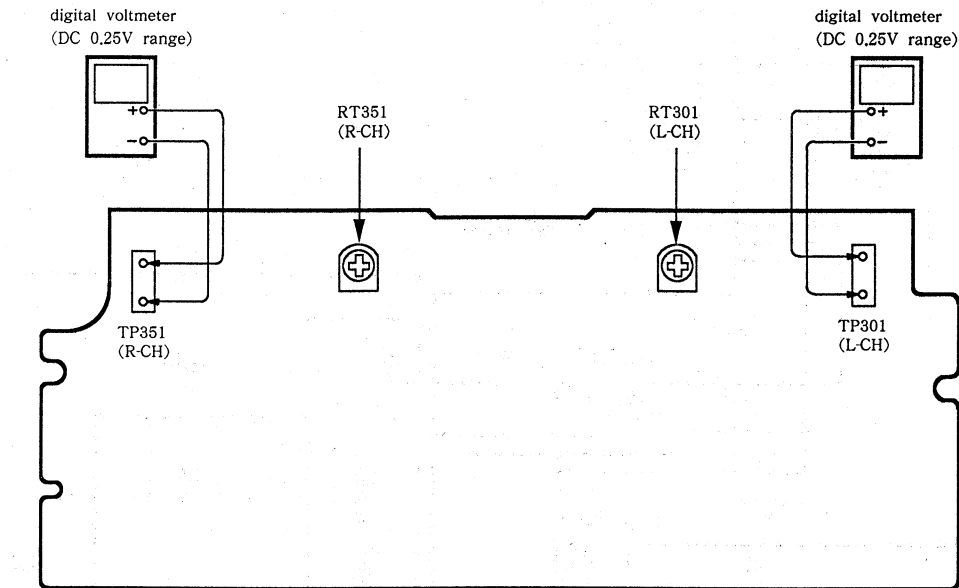
1. Adjust the idling after tuning the unit on for about 10-15 minutes, giving it time to warm up.
2. Always make sure to adjust the idling when repairing the power amp section or when replacing any parts.

IDLING ADJUSTMENT

Procedure :

Set the ATTENUATOR control as low as possible and adjust RT301 (L-CH) and RT351 (R-CH) so that the voltmeter reads 7mV at TP301 (L-CH) and TP351 (R-CH).

Adjustment Location : MAIN board



SECTION 3
DIAGRAMS

3-1. IC PIN FUNCTION

• IC601 DIGITAL RECEIVER (CXD2900Q)

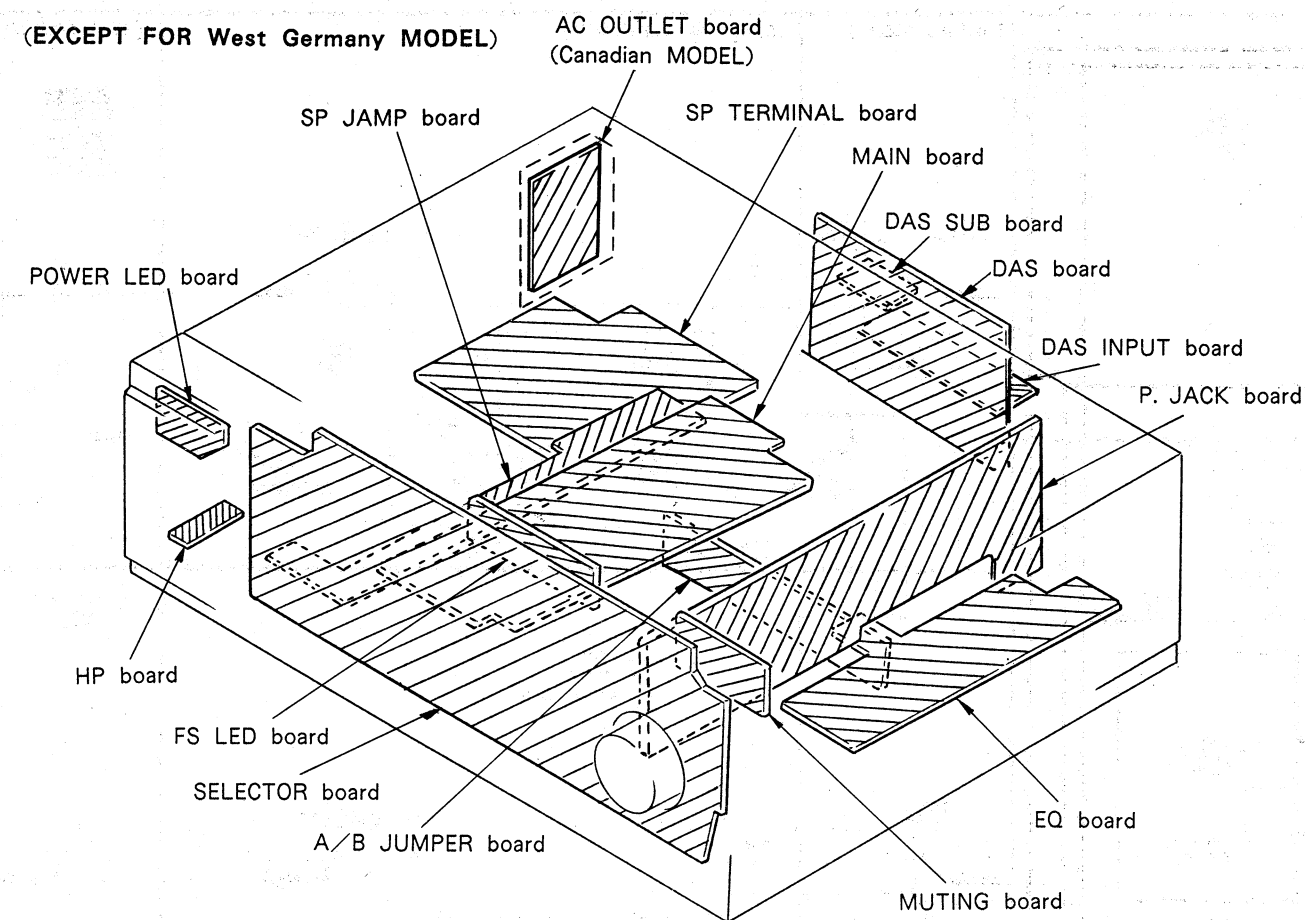
No.	SIGNAL	I/O	FUNCTION	No.	SIGNAL	I/O	FUNCTION
1	DIAN	①	Not used (+5V)	26	RX2	①	Not used (GND)
2	UREC	①	Not used (+5V)	27	RX3	①	Not used (GND)
3	XCLR	①	Not used (+5V)	28	S1	①	Not used (GND)
4	CKIN	I	Clock input	29	S2	①	Not used (GND)
5	DGND		Digital system ground	30	DVCC		Digital system +5V
6	DGND		Digital system ground	31	DRCE	⊙	Not used (NC)
7	AVCC1		Analog system +5V	32	DGND		Digital system ground
8	VC OUT	O	VCO input	33	XTLO	O	Oscillation signal output
9	C1B		Connected capacitor for VCO	34	XTLI	I	Oscillation signal input
10	C1A		Connected capacitor for VCO	35	STOP	O	Oscillation control
11	R2		Connected resistor for VCO	36	DVCC		Digital system +5V
12	VCO1	I	VCO output	37	DVCC		Digital system +5V
13	R1		Connected resistor for VCO	38	MCK	O	Master clock (384FS)
14	AGND		Analog system ground	39	BCK	O	Bit clock (64FS)
15	AGND		Not used (NC)	40	ADDT	O	Audio data output 1
16	PHCO		Phase detector output	41	LRCK	O	LR clock (1FS)
17	PLVARI	I	PLL variable input	42	RECO	⊙	Not used (NC)
18	PLREFI	I	PLL reference input	43	ANDT	①	Not used (NC)
19	AVCC2		Analog system +5V	44	MUTE	O	Audio mute control
20	PLREFO	O	PLL reference output				L : normal, H : mute
21	PLVARO	O	PLL variable output	45	RECM	Ⓜ	Not used (NC)
22	SWC		Not used (+5V)	46	FS1	O	Sampling frequency data 1 ※ ㉓
23	T1		Not used (GND)	47	FS2	O	Sampling frequency data 1 ※ ㉓
24	T2		Not used (GND)	48	EMP	O	De-emphasys switch
25	RX1	I	Digital signal input 1				H : ON, L : OFF

※ ㉓ Sampling frequency data

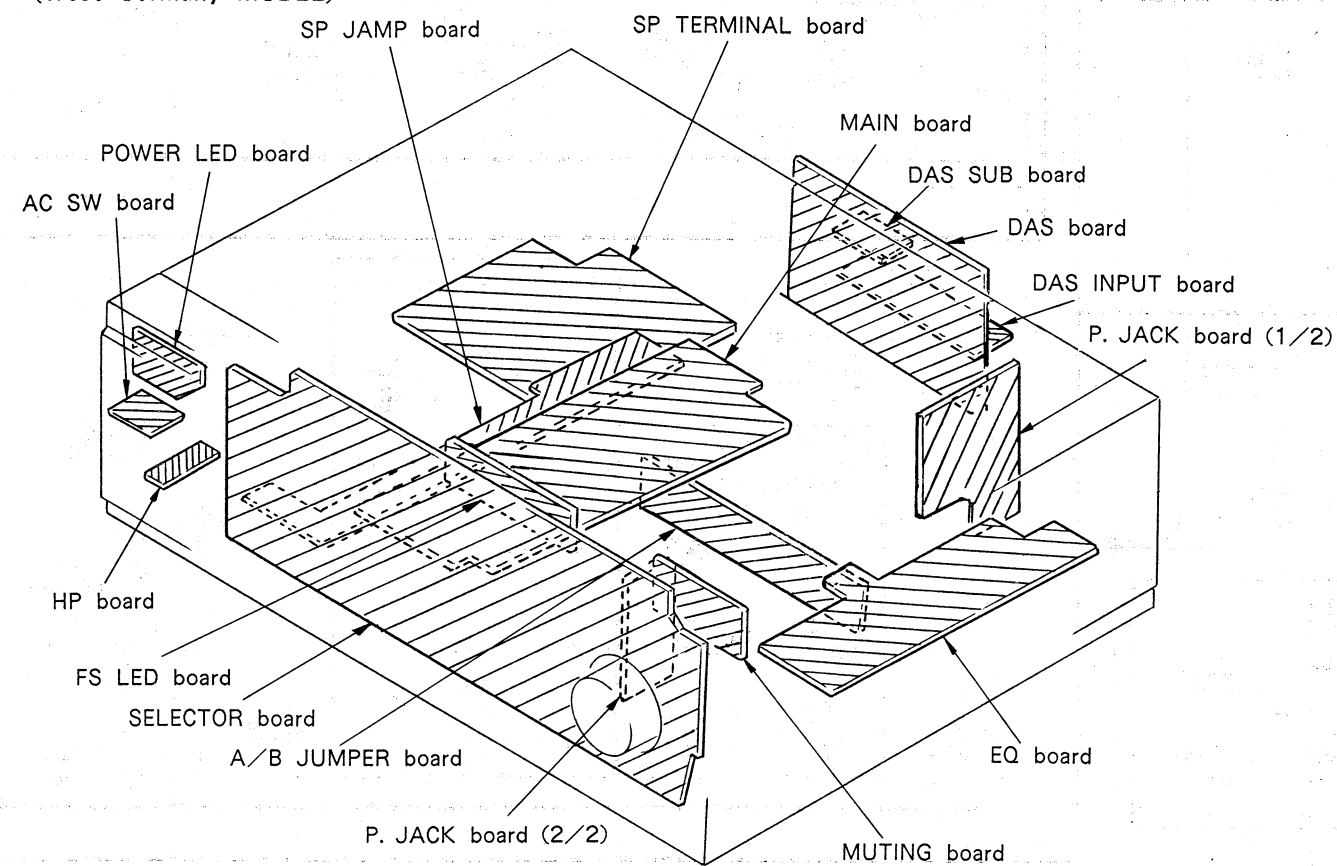
FS1 ㉓	FS2 ㉓	FS
L	L	44.1 kHz
L	H	48 kHz
H	L	—
H	H	32 KHz

3-2. CIRCUIT BOARDS LOCATION

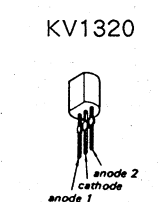
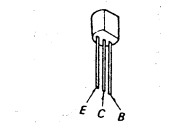
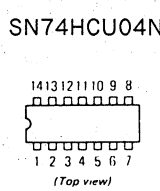
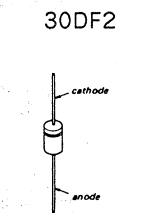
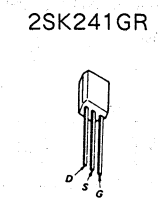
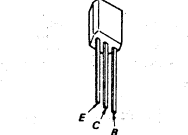
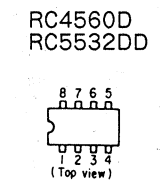
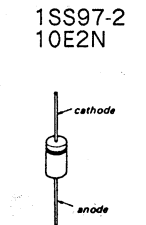
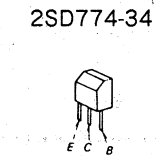
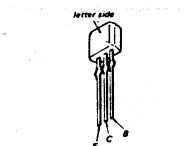
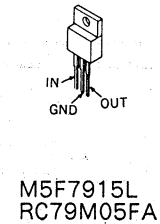
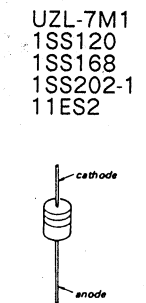
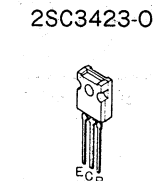
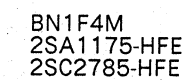
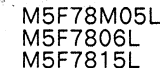
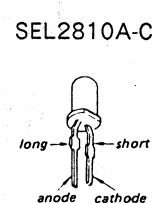
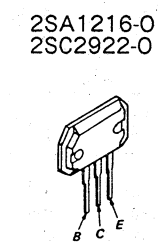
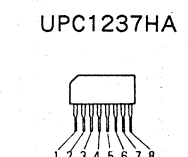
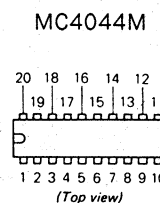
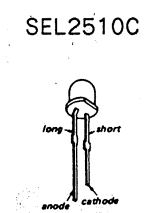
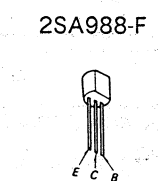
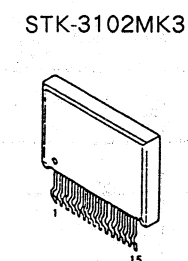
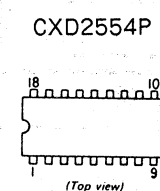
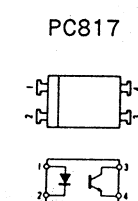
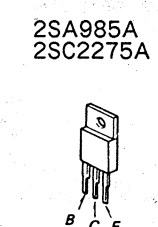
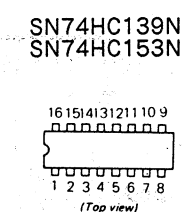
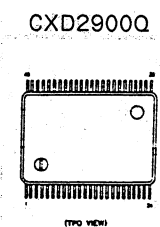
(EXCEPT FOR West Germany MODEL)

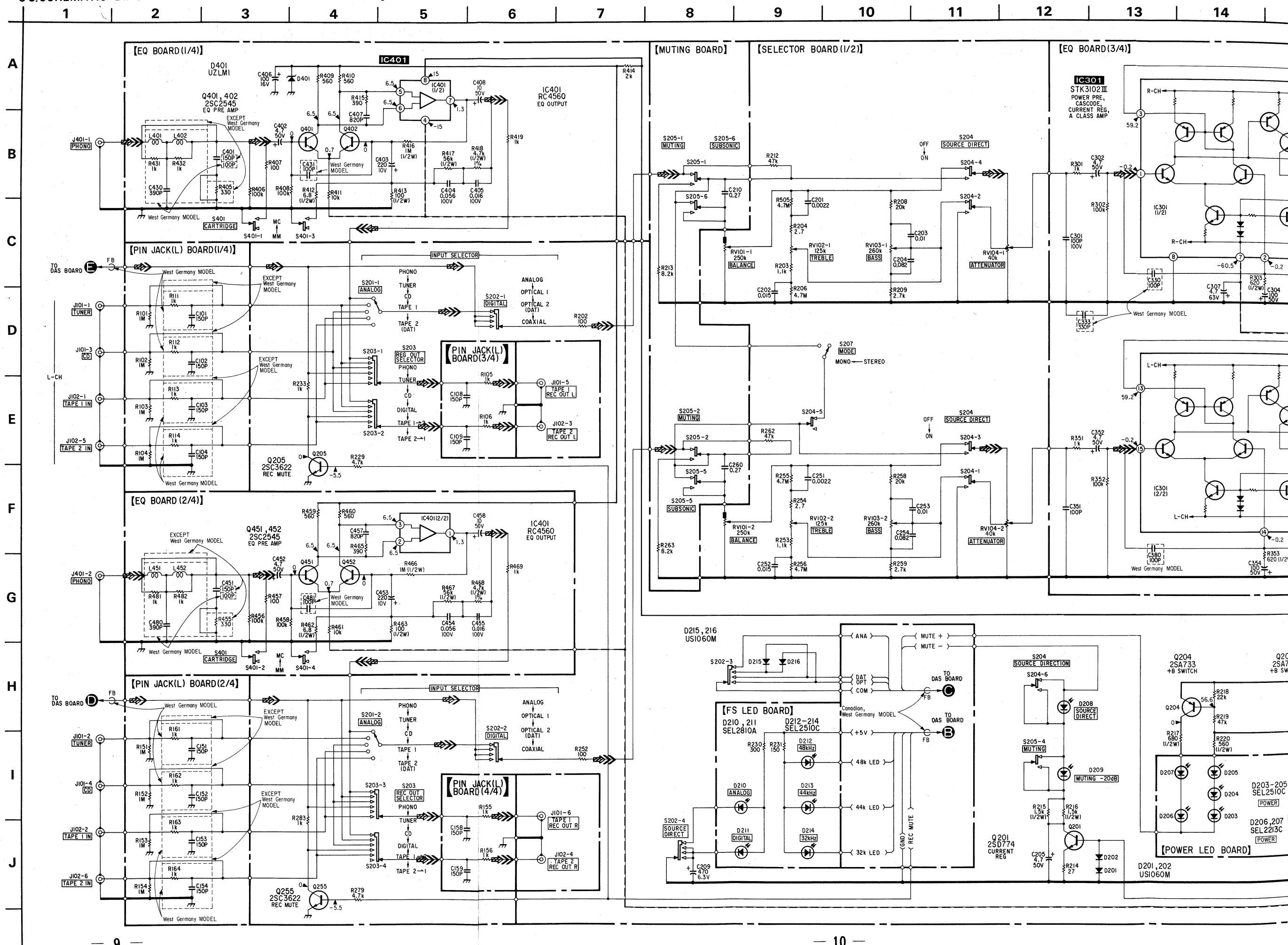


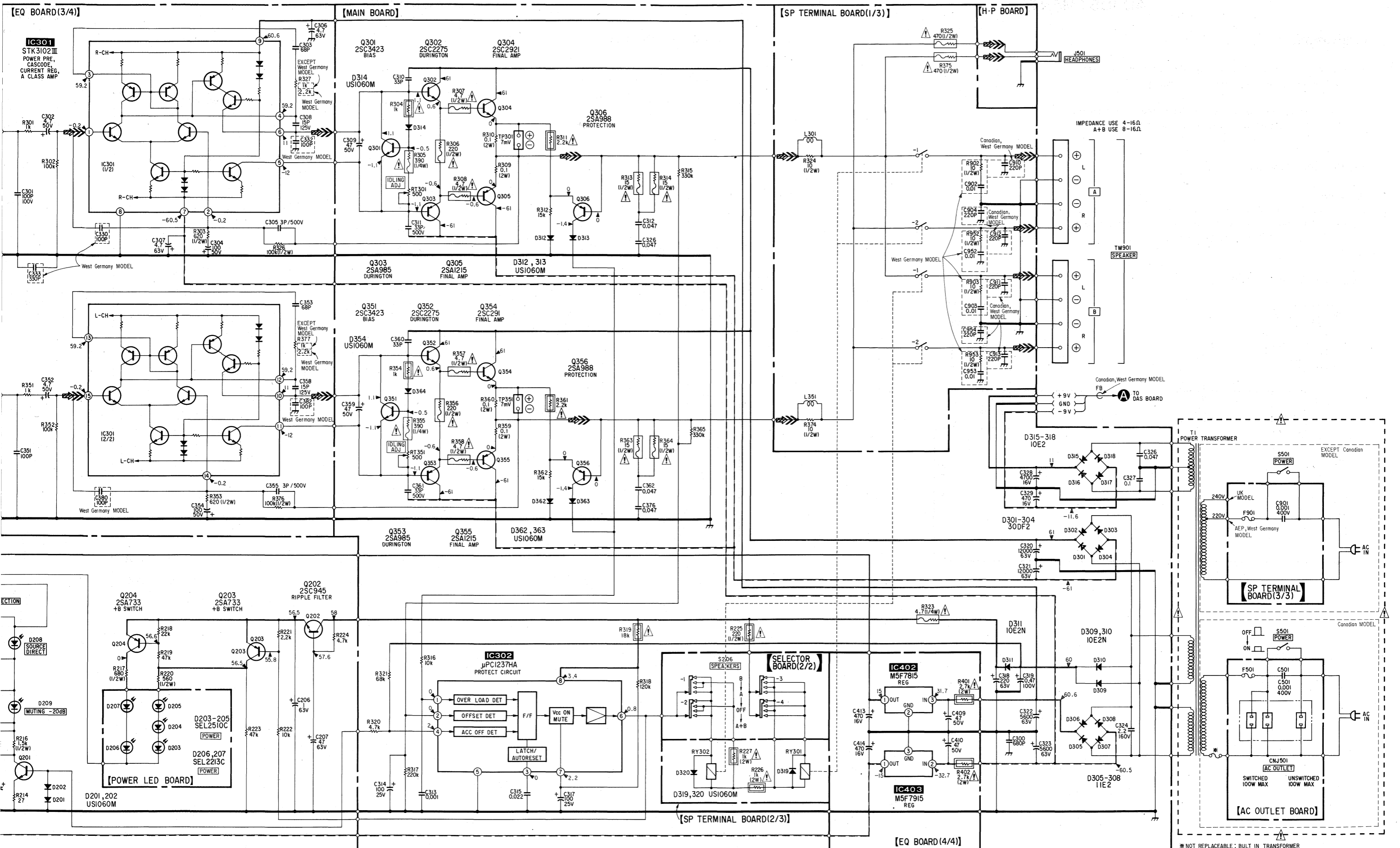
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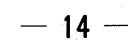


• SEMICONDUCTOR LEAD LAYOUTS

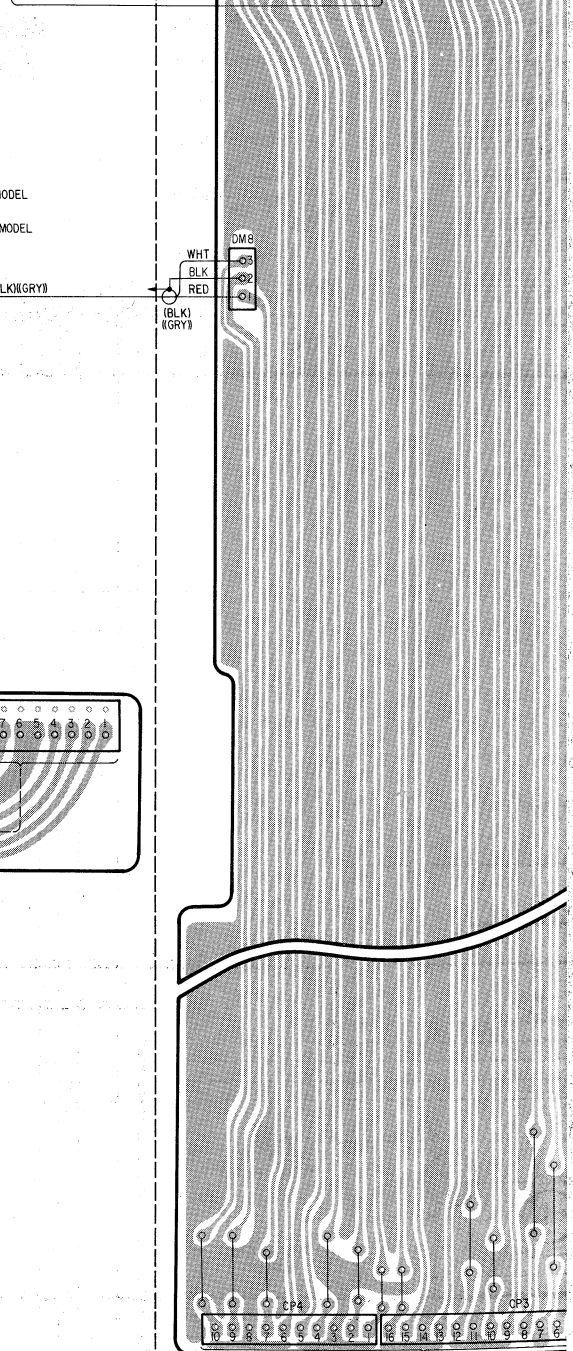








【 PIN JACK (L) BOARD 】



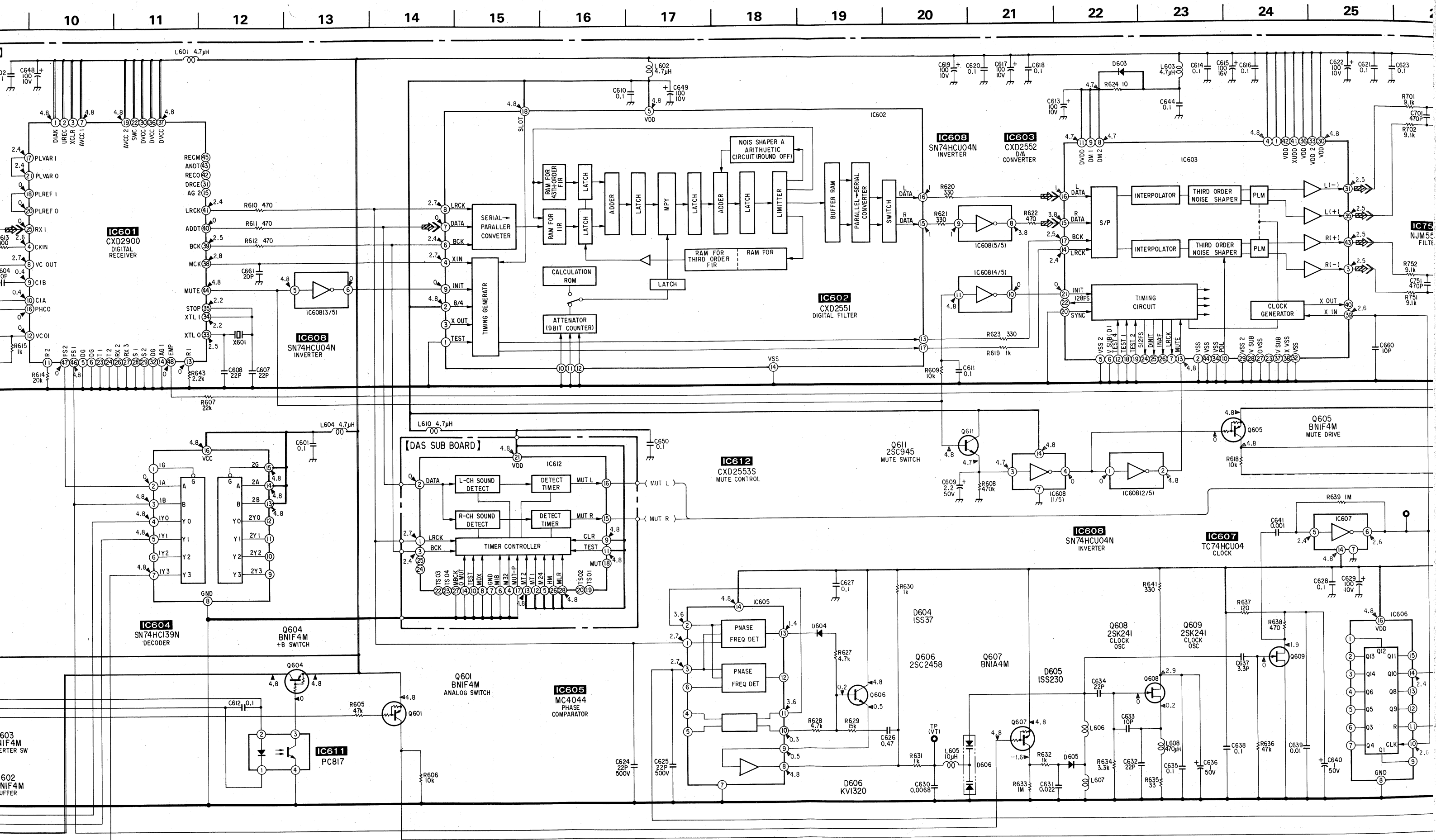
Canadian, West Germany MODEL

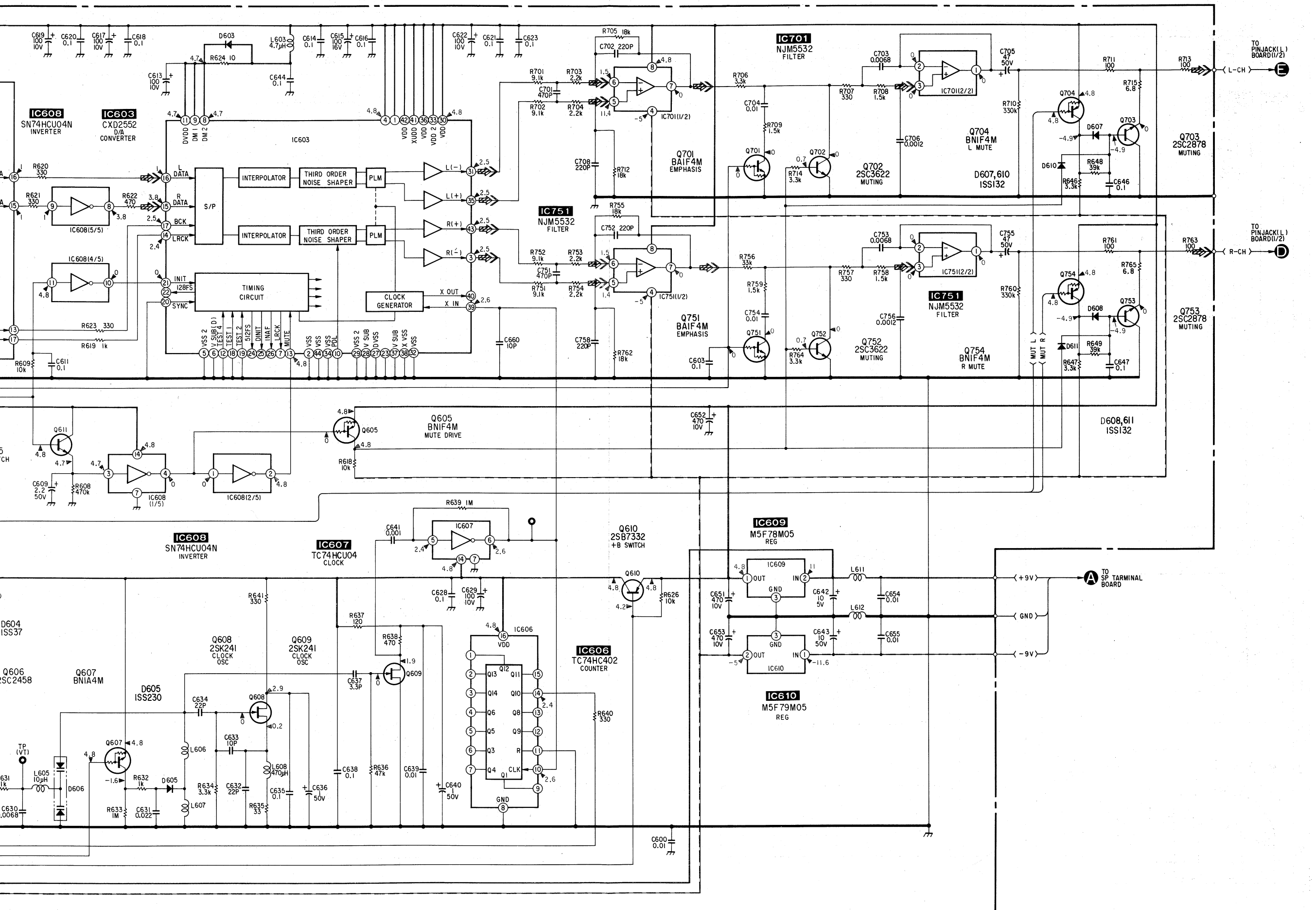


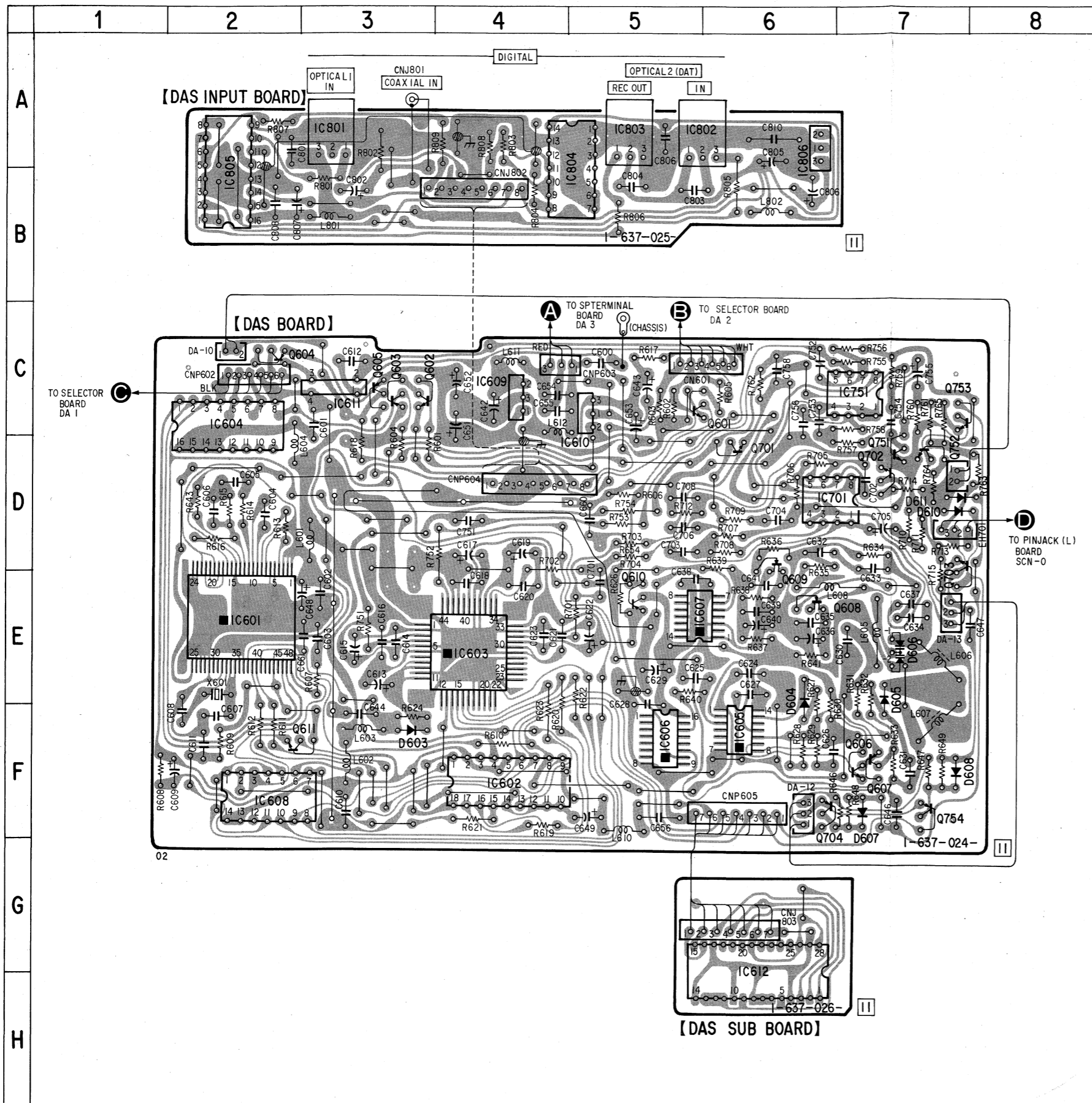
Ref. No.	Location	Ref. No.	Location
IC301	I-25	D206	I-6
IC302	E-12	D207	I-6
IC401	F-25	D208	G-19
IC402	G-52	D209	K-20
IC403	G-24	D210	A-12
		D211	A-14
Q201	I-11	D212	A-14
Q202	J-12	D213	A-14
Q203	I-12	D214	A-15
Q204	I-11	D215	J-13
Q205	H-17		
		D216	J-14
Q255	H-14	D301	E-17
Q301	B-14	D302	F-17
Q302	C-14	D303	F-15
Q303	C-14	D304	E-15
Q304	B-13		
		D305	E-19
Q305	B-15	D306	E-19
Q306	C-13	D307	E-15
Q351	B-18	D308	F-15
Q352	C-19	D309	E-15
Q353	C-18		
		D310	E-15
Q354	B-20	D311	E-14
Q355	B-17	D312	C-13
Q356	C-20	D313	C-13
Q401	E-25	D314	B-13
Q402	E-25		
		D315	E-8
Q451	E-24	D316	E-8
Q452	E-24	D317	E-8
		D318	E-8
		D319	D-7
D201	J-11		
D202	J-11	D320	D-8
D203	I-6	D362	B-20
D204	I-6	D363	B-20
D205	I-6	D364	B-19
		D401	G-25

- ○ — : parts extracted from the component side.
- ● — : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- ■■■ : Pattern on the side which is seen.









• SEMICONDUCTOR LOCATION
DAS SECTION

Ref. No.	Location
IC601	E-2
IC602	F-4
IC603	E-4
IC604	C-2
IC605	F-6
IC606	F-5
IC607	E-5
IC608	F-2
IC609	C-4
IC610	C-5
IC611	C-3
IC612	G-6
IC701	D-6
IC751	C-7
IC801	A-3
IC802	A-5
IC803	A-5
IC804	A-5
IC805	A-2
IC806	A-6
Q601	C-5
Q602	C-3
Q603	C-3
Q604	C-2
Q605	C-3
Q606	F-7
Q607	F-7
Q608	E-6
Q609	D-6
Q610	E-5
Q611	F-2
Q701	D-6
Q702	D-7
Q703	D-7
Q704	F-6
Q751	D-7
Q752	D-7
Q753	C-7
Q754	F-7
D603	F-3
D604	E-6
D605	E-7
D606	E-7
D607	F-7
D608	F-7
D610	D-7
D611	D-7

Note on Schematic Diagram :

- All capacitors are in μF unless otherwise noted. pF : $\mu \mu F$ 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}W$ or less unless otherwise specified.
- % : indicates tolerance.
- \square : nonflammable resistor.

Note:
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Note:
Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- — : B+ Line
- - - - : B- Line
- \square : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark : PHONO
- Voltages are taken with a VOM (Input impedance $10M \Omega$). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path.
- \Rightarrow : PHONO
- \Rightarrow : DIGITAL (COAXIAL)

Note on Printed Wiring Boards :



- \circ : parts extracted from the component side.
- \bullet : parts extracted from the conductor side.
- \blacksquare : parts mounted on the conductor side.
- \square : Pattern on the side which is seen.


SECTION 4 EXPLODED VIEWS

NOTE:

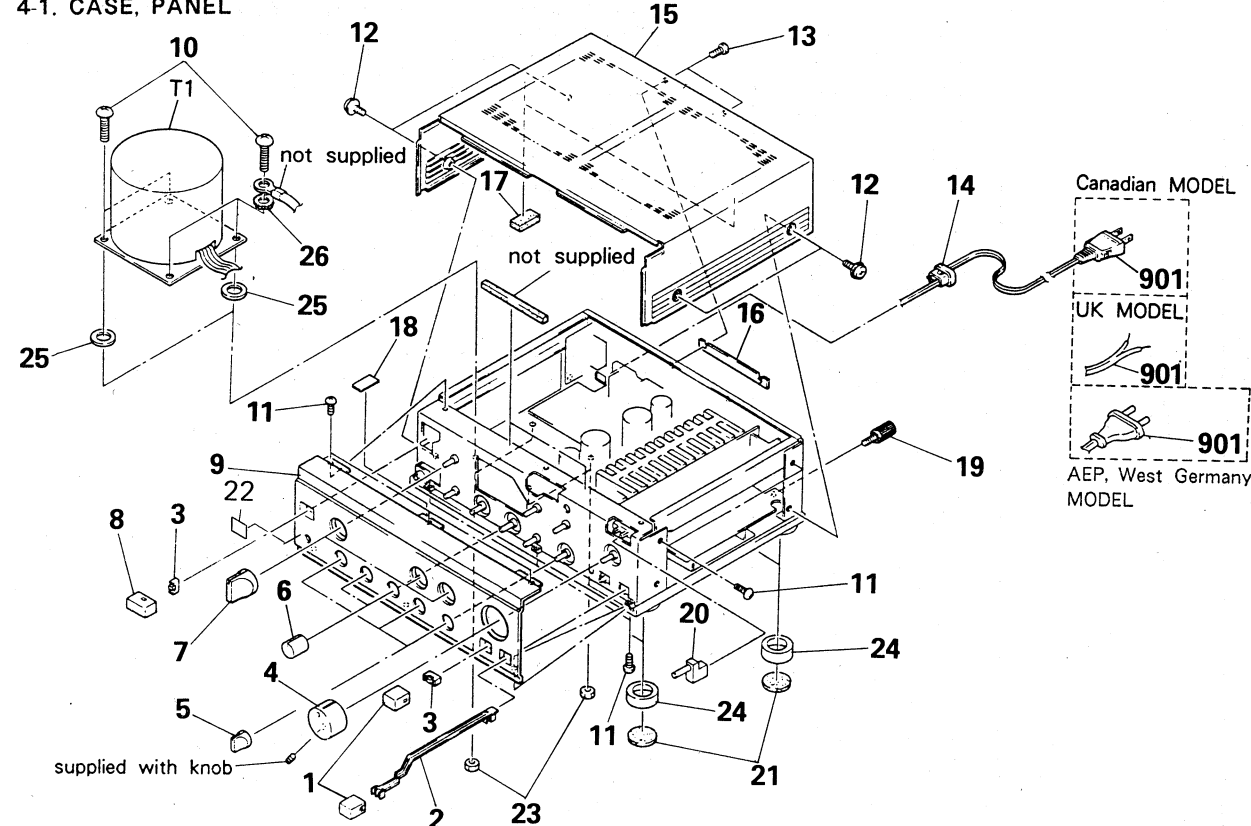
- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:
(RED) ... KNOB, BALANCE (WHITE)
↑ Cabinet's Color ↑ Parts' Color

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

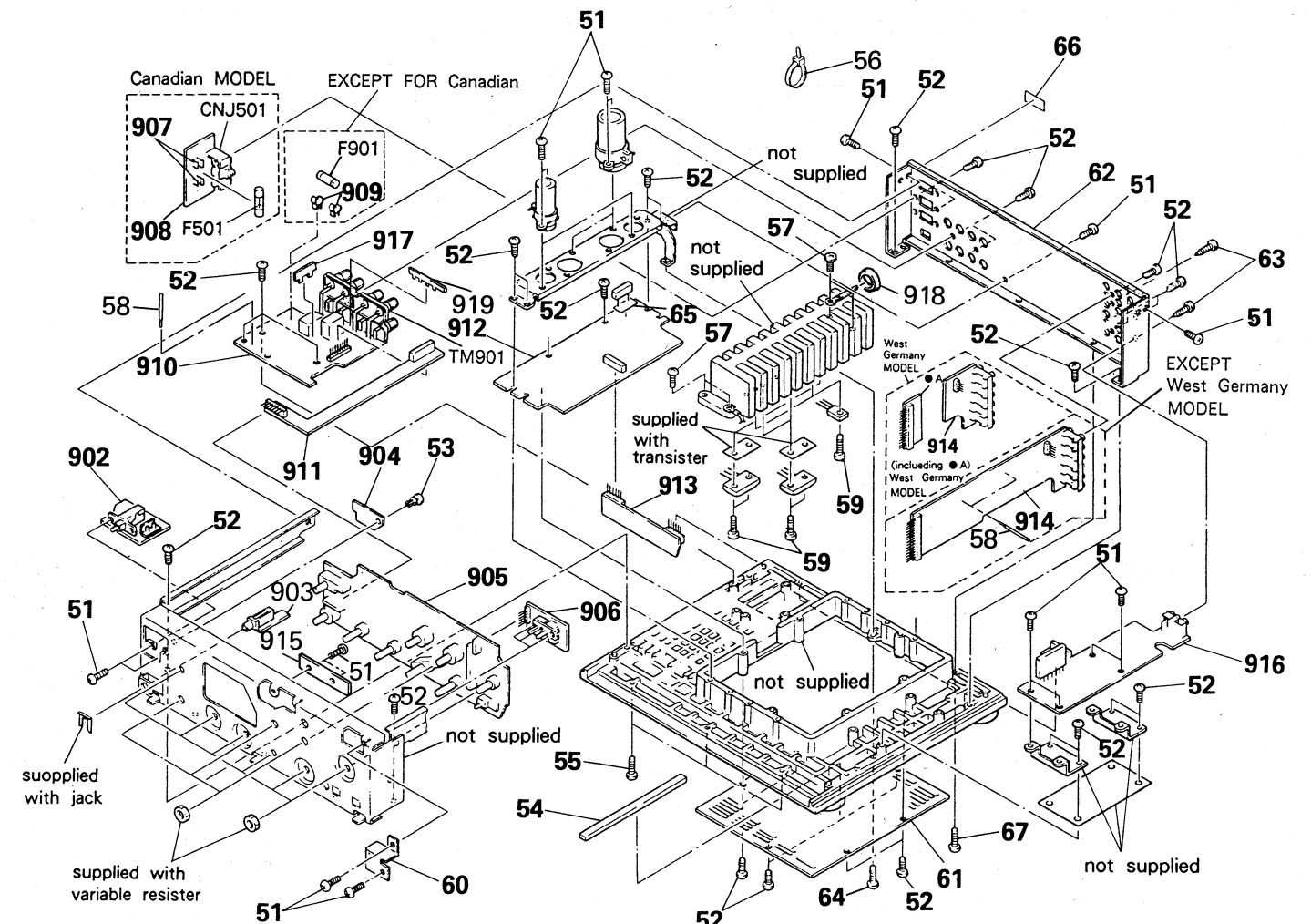
4.1. CASE, PANEL






No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	4-908-875-01	KNOB, SQUARE		16	*4-929-232-01	SPACER	
2	4-929-227-01	JOINT		17	*2-527-517-00	CUSHION, CASE RETAINER	
3	4-864-307-00	RING		18	*3-846-067-21	SPACER (C)	
4	4-929-224-01	KNOB (NA-48)		19	*4-941-033-01	SCREW, FIXED, FEEDER	
5	4-937-831-01	KNOB (FLAT-21)		20	4-923-879-01	BUTTON (DIA.4)	
6	4-937-833-01	KNOB (ROUND-21)		21	*4-923-850-01	FOOT (DIA. 46)	
7	4-937-832-01	KNOB (FLAT-29)		22	*3-703-710-41	STICKER, SONY SYMBOL (12)	
8	4-908-856-01	KNOB, SQUARE		23	7-684-024-04	N 4, TYPE 2	
9	A-4323-694-A	(Canadian,UK).....PANEL ASSY, FRONT		24	4-923-882-02	RING (LARGE-16), ORNAMENTAL, FOOT	
	A-4323-696-A	(AEP,West Germany)....PANEL ASSY, FRONT		25	4-885-984-21	WASHER	
10	7-682-566-09	SCREW +B 4X20		26	7-623-423-07	LW 4, TYPE B	
11	7-682-547-09	SCREW +BVTT 3X6 (S)		901	△1-574-383-11	(AEP,West Germany)....CORD, POWER (AEP)	
12	4-847-802-00	SCREW			△1-574-384-11	(UK).....CORD, POWER (WITH CONNECTOR)	
13	7-682-549-09	SCREW +BVTT 3X10 (S)			△1-575-105-11	(Canadian).....CORD, POWER	
14	*3-703-244-00	BUSHING (2104), CORD		T1	△1-450-257-11	(Canadian).....TRANSFORMER, POWER	
15	4-916-737-31	(EXCEPT AE2)....CASE		T1	△1-450-258-11	(AE1,West Germany)....TRANSFORMER, POWER	
	4-916-737-41	(AE2).....CASE		T1	△1-450-259-11	(AE2).....TRANSFORMER, POWER	
				T1	△1-450-260-11	(UK).....TRANSFORMER, POWER	

4.2. CHASSIS, BACK PANEL

● A : JUMPER BOARD (West Germany Model)

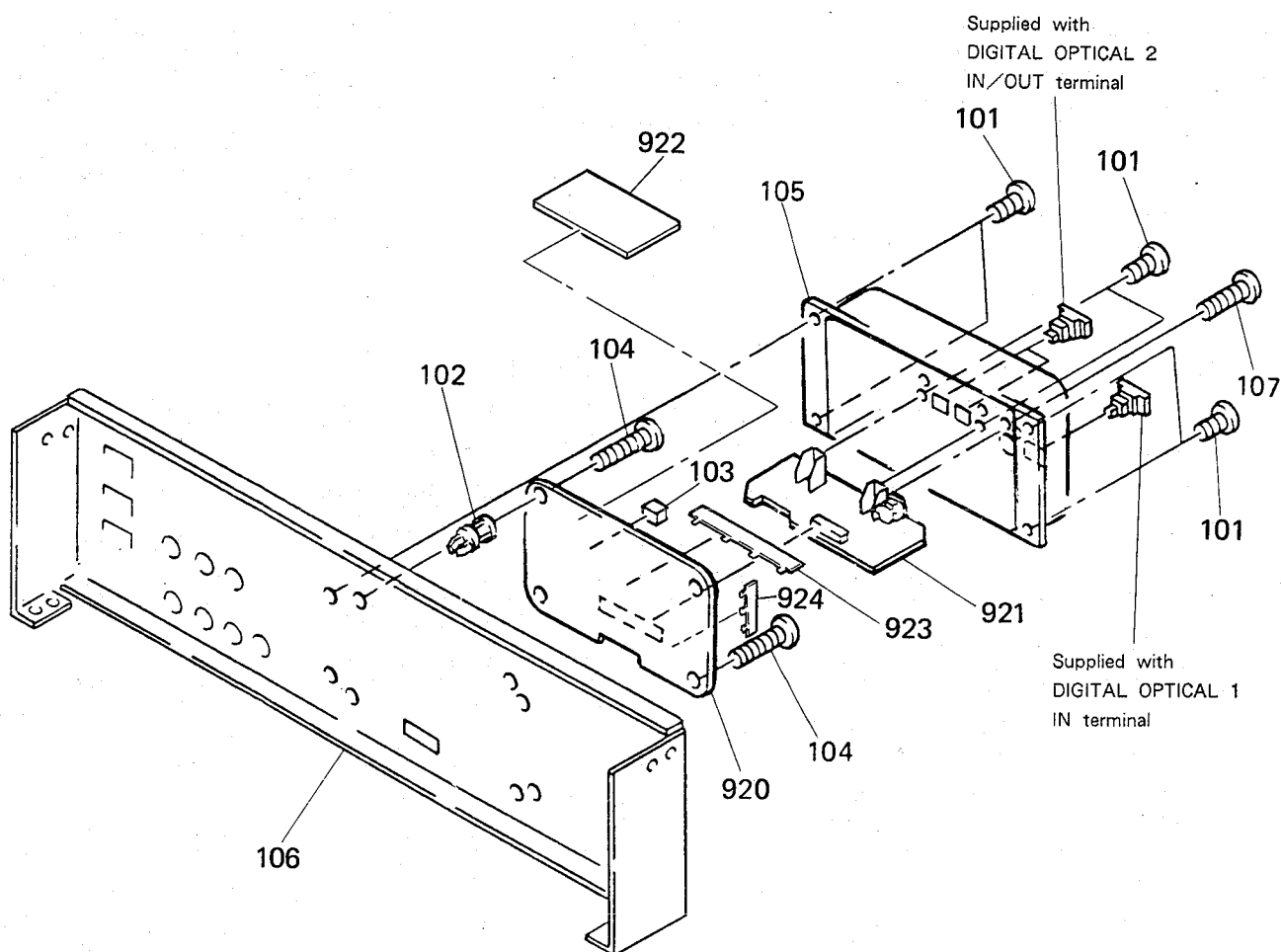


Note:
The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

Note:
Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51	7-682-547-09	SCREW +BVTT 3X6 (S)		906	*1-629-747-11	PC BOARD, MUTING	
52	7-685-647-79	SCREW +BVTP 3X10 TYPE2 SLIT		907	1-533-190-11	(Canadian)....CLIP, FUSE	
53	4-812-134-00	RIVET NYLON, 3.5		908	*1-629-755-11	(Canadian)....PC BOARD, AC OUTLET	
54	*4-916-782-21	DAMPER		909	1-533-183-11	(EXCEPT Canadian)....HOLDER, FUSE	
55	7-682-549-09	SCREW +BVTT 3X10 (S)		910	*1-629-753-11	PC BOARD, SP TERMINAL	
56	3-655-653-21	BAND (TAITON), BINDING		911	*1-635-757-11	(EXCEPT West Germany)....PC BOARD, SP JAMP	
57	7-685-650-79	SCREW +BVTP 3X16 TYPE2 SLIT			*1-635-839-11	(West Germany).....PC BOARD, SP JAMP	
58	*4-352-844-01	PIN, LEAD, COATING		912	*A-4341-437-A	MOUNTED PCB, MAIN	
59	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3		913	*1-629-750-11	PC BOARD, A/B JUMPER	
60	*4-937-801-01	BRACKET, SW		914	*1-629-758-11	(EXCEPT West Germany)....PC BOARD, P.JACK(L)	
61	*4-916-732-01	BOARD, BOTTOM			*1-635-837-11	(West Germany).....PC BOARD, P.JACK(L)	
62	*4-929-239-03	(Canadian).....PANEL, BACK		915	*1-629-752-11	PC BOARD, FS-LED	
	*4-929-239-21	(EXCEPT Canadian)....PANEL, BACK		916	*A-4334-901-A	(EXCEPT West Germany)....MOUNTED PCB, EQ	
63	7-621-849-00	SCREW (BV/RING)			*A-4341-436-A	(West Germany).....MOUNTED PCB, EQ	
64	7-682-550-09	SCREW +BVTT 3X12 (S)		917	*1-560-242-61	BUS BAR 2P	
65	*4-921-941-31	CUSHION (FL)		918	*1-543-648-11	(Canadian,West Germany)....BEAD, FERRITE	
66	*3-703-270-00	(Canadian)....LABEL, AC 120V 60Hz		919	*1-560-242-31	(Canadian,West Germany)....BUS BAR 5P	
67	7-685-876-09	SCREW +BVTT 3X16 (S)			CNJ501△1-540-062-31	(Canadian)....OUTLET, AC (POLAR)	
902	*1-635-841-11	(West Germany)....PC BOARD, AC SW		F501	△1-532-510-11	(Canadian)....FUSE, GLASE-TUBE (8A)	
903	*1-629-749-11	PC BOARD, HP		F901	△1-532-350-00	(EXCEPT Canadian)....FUSE, TIME-LAG (4A)	
904	*1-629-751-11	PC BOARD, POWER LED		TM901	1-537-227-11	(AE2).....TERMINAL BOARD (SP)	
905	*A-4341-209-A	(EXCEPT AE2)....MOUNTED PCB, SELECTOR		TM901	1-537-228-11	(West Germany).....TERMINAL BOARD (SP)	
	*A-4341-215-A	(AE2).....MOUNTED PCB, SELECTOR		TM901	1-537-235-11	(Canadian,AE1,UK)....TERMINAL BOARD (SP)	

4.3. D/A CONVERTER SECTION



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
101	7-682-547-09	SCREW +BVTT 3X6 (S)		920	*A-4341-211-A	MOUNTED PCB, DAS	
102	*4-884-992-00	SUPPORT, PC		921	*A-4341-212-A	MOUNTED PCB, DAS INPUT	
103	*4-929-244-01	CUSHION		922	*1-637-026-11	PC BOARD, DAS SUB	
104	7-685-650-79	SCREW +BVTP 3X16 TYPE2 N-S		923	*1-560-242-21	BUS BAR 4P	
105	*4-929-238-01	CASE, SHIELD		924	*1-560-242-11	BUS BAR 3P	
106	*4-929-239-03	(Canadian)...PANEL, BACK					
	*4-929-239-21	(EXCEPT Canadian)...PANEL, BACK					
107	7-621-849-00	SCREW, TAPPING					

SECTION 5

ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:MF: μ F, PF: μ F.**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

SEMICONDUCTORSIn each case, U: μ , for example:UA....: μ A...., UPA....: μ PA....,UPC....: μ PC, UPD....: μ PD....

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
901	Δ 1-574-383-11	(AEP, West Germany)...CORD, POWER (AEP)	C154	1-162-284-31	(West Germany)...CERAMIC 150PF 10% 50V
	Δ 1-574-384-11	(UK).....CORD, POWER (WITH CONNECTOR)	C158	1-162-284-31	CERAMIC 150PF 10% 50V
	Δ 1-575-105-11	(Canadian).....CORD, POWER	C159	1-162-284-31	CERAMIC 150PF 10% 50V
902	*1-635-841-11	(West Germany)...PC BOARD, AC SW	C201	1-130-475-00	MYLAR 0.0022MF 5% 50V
903	*1-629-749-11	PC BOARD, HP	C202	1-130-485-00	MYLAR 0.015MF 5% 50V
904	*1-629-751-11	PC BOARD, POWER LED	C203	1-130-483-00	MYLAR 0.01MF 5% 50V
905	*A-4341-209-A	(EXCEPT AE2)...MOUNTED PCB, SELECTOR	C204	1-136-164-00	FILM 0.082MF 5% 50V
	*A-4341-215-A	(AE2).....MOUNTED PCB, SELECTOR	C205	1-123-369-00	ELECT 4.7MF 20% 50V
906	*1-629-747-11	PC BOARD, MUTING	C206	1-123-380-00	ELECT 1MF 20% 63V
907	1-533-190-11	(Canadian)...CLIP, FUSE	C207	1-124-918-11	ELECT 47MF 20% 63V
908	*1-629-755-11	(Canadian)...PC BOARD, AC OUTLET	C209	1-124-472-11	ELECT 470MF 20% 6.3V
909	1-533-183-11	(EXCEPT Canadian)...HOLDER, FUSE	C210	1-136-170-00	FILM 0.27MF 5% 50V
910	*1-629-753-11	PC BOARD, SP TERMINAL	C251	1-130-475-00	MYLAR 0.0022MF 5% 50V
911	*1-635-757-11	(EXCEPT West Germany)..PC BOARD, SP JAMP	C252	1-130-485-00	MYLAR 0.015MF 5% 50V
	*1-635-839-11	(West Germany).....PC BOARD, SP JAMP	C253	1-130-483-00	MYLAR 0.01MF 5% 50V
912	*A-4341-437-A	MOUNTED PCB, MAIN	C254	1-136-164-00	FILM 0.082MF 5% 50V
913	*1-629-750-11	PC BOARD, A/B JUMPER	C260	1-136-170-00	FILM 0.27MF 5% 50V
914	*1-629-758-11	(EXCEPT West Germany)	C300	1-162-292-31	CERAMIC 680PF 10% 50V
		...PC BOARD, P.JACK (L)	C301	1-136-808-11	FILM 100PF 5% 100V
	*1-635-837-11	(West Germany)...PC BOARD, P.JACK (L)	C302	1-123-369-00	ELECT 4.7MF 20% 50V
915	*1-629-752-11	PC BOARD, FS-LED	C303	1-104-276-11	POLYSTYRENE 68PF 10% 50V
916	*A-4334-901-A	(EXCEPT West Germany)..MOUNTED PCB, EQ	C304	1-126-052-11	ELECT 100MF 20% 50V
	*A-4341-436-A	(West Germany).....MOUNTED PCB, EQ	C305	1-107-044-00	MICA 3PF 0.5PF 500V
917	*1-560-242-61	BUS BAR 2P	C306	1-123-369-00	ELECT 4.7MF 20% 63V
918	*1-543-648-11	(Canadian, West Germany)..BEAD, FERRITE	C307	1-123-369-00	ELECT 4.7MF 20% 63V
919	*1-560-242-31	(Canadian, West Germany)...BUS BAR 5P	C308	1-104-263-00	POLYSTYRENE 15PF 10% 125V
920	*A-4341-211-A	MOUNTED PCB, DAS	C309	1-124-910-11	ELECT 47MF 20% 50V
921	*A-4341-212-A	MOUNTED PCB, DAS INPUT	C310	1-107-159-00	MICA 33PF 5% 500V
922	*1-637-026-11	PC BOARD, DAS SUB	C311	1-107-159-00	MICA 33PF 5% 500V
923	*1-560-242-21	BUS BAR 4P	C312	1-136-161-00	FILM 0.047MF 5% 50V
924	*1-560-242-11	BUS BAR 3P	C313	1-130-471-00	MYLAR 0.001MF 5% 50V
C101	1-162-284-31	(West Germany)...CERAMIC 150PF 10% 50V	C314	1-123-333-00	ELECT 100MF 20% 25V
C102	1-162-284-31	(West Germany)...CERAMIC 150PF 10% 50V	C315	1-130-487-00	MYLAR 0.022MF 5% 50V
C103	1-162-284-31	(West Germany)...CERAMIC 150PF 10% 50V	C317	1-123-333-00	ELECT 100MF 20% 25V
C104	1-162-284-31	(West Germany)...CERAMIC 150PF 10% 50V	C318	1-123-604-00	ELECT 220MF 20% 63V
C108	1-162-284-31	CERAMIC 150PF 10% 50V	C319	1-123-379-00	ELECT 0.47MF 20% 100V
C109	1-162-284-31	CERAMIC 150PF 10% 50V	C320	1-125-460-11	CAP, ELECT 12000MF
C151	1-162-284-31	(West Germany)...CERAMIC 150PF 10% 50V	C321	1-125-460-11	CAP, ELECT 12000MF
C152	1-162-284-31	(West Germany)...CERAMIC 150PF 10% 50V	C322	1-125-558-11	CAP, ELECT 5600MF
C153	1-162-284-31	(West Germany)...CERAMIC 150PF 10% 50V	C323	1-125-558-11	CAP, ELECT 5600MF
			C324	1-136-880-11	FILM 2.2MF 10% 160V
			C326	1-136-161-00	FILM 0.047MF 5% 50V
			C327	1-136-165-00	FILM 0.1MF 5% 50V
			C328	1-124-523-11	ELECT 4700MF 20% 16V
			C329	1-126-103-11	ELECT 470MF 20% 16V

Ref.No.	Part No.	Description			
C330	1-162-282-31	(West Germany)...CERAMIC	100PF	5%	50V
C332	1-162-282-31	(West Germany)...CERAMIC	100PF	5%	50V
C333	1-162-288-31	(West Germany)...CERAMIC	330PF	10%	50V
C351	1-136-808-11	FILM	100PF	5%	100V
C352	1-123-369-00	ELECT	4.7MF	20%	50V
C353	1-104-276-11	POLYSTYRENE	68PF	10%	50V
C354	1-126-052-11	ELECT	100MF	20%	50V
C355	1-107-044-00	MICA	3PF	0.5PF	500V
C358	1-104-263-00	POLYSTYRENE	15PF	10%	125V
C359	1-124-910-11	ELECT	47MF	20%	50V
C360	1-107-159-00	MICA	33PF	5%	500V
C361	1-107-159-00	MICA	33PF	5%	500V
C362	1-136-161-00	FILM	0.047MF	5%	50V
C376	1-136-161-00	FILM	0.047MF	5%	50V
C380	1-162-282-31	(West Germany)...CERAMIC	100PF	5%	50V
C382	1-162-282-31	(West Germany)...CERAMIC	100PF	5%	50V
C401	1-102-973-00	(West Germany)...CERAMIC	100PF	5%	50V
C401	1-104-282-11	(EXCEPT West Germany) ...POLYSTYRENE	150PF	5%	50V
C402	1-123-369-00	ELECT	4.7MF	20%	50V
C403	1-124-997-11	ELECT	470MF	20%	10V
C404	1-130-341-00	FILM	0.056MF	3%	100V
C405	1-130-971-00	FILM	0.016MF	3%	100V
C406	1-123-333-00	ELECT	100MF	20%	16V
C407	1-130-470-00	MYLAR	820PF	5%	50V
C408	1-126-059-11	ELECT	10MF	20%	50V
C409	1-124-910-11	ELECT	47MF	20%	50V
C410	1-124-910-11	ELECT	47MF	20%	50V
C413	1-126-103-11	ELECT	470MF	20%	16V
C414	1-126-103-11	ELECT	470MF	20%	16V
C430	1-110-342-11	(West Germany)...MYLAR	390PF	5%	50V
C431	1-162-282-31	(West Germany)...CERAMIC	100PF	5%	50V
C451	1-102-973-00	(West Germany)...CERAMIC	100PF	5%	50V
C451	1-104-282-11	(EXCEPT West Germany) ...POLYSTYRENE	150PF	5%	50V
C452	1-123-369-00	ELECT	4.7MF	20%	50V
C453	1-124-997-11	ELECT	470MF	20%	10V
C454	1-130-341-00	FILM	0.056MF	3%	100V
C455	1-130-971-00	FILM	0.016MF	3%	100V
C457	1-130-470-00	MYLAR	820PF	5%	50V
C458	1-126-059-11	ELECT	10MF	20%	50V
C480	1-110-342-11	(West Germany)...MYLAR	390PF	5%	50V
C481	1-162-282-31	(West Germany)...CERAMIC	100PF	5%	50V
C501	1-161-741-51	(Canadian)...CERAMIC	0.001	10%	400V
C600	1-162-306-11	CERAMIC	0.01MF	20%	16V
C601	1-164-159-11	CERAMIC	0.1MF		50V
C602	1-164-159-11	CERAMIC	0.1MF		50V
C603	1-136-165-00	FILM	0.1MF	5%	50V
C604	1-107-202-00	MICA	10PF	0.5PF	500V
C605	1-136-169-00	FILM	0.22MF	5%	50V
C606	1-130-479-00	MYLAR	0.0047MF	5%	50V
C607	1-107-210-00	MICA	22PF	5%	500V
C608	1-107-210-00	MICA	22PF	5%	500V
C609	1-123-381-00	ELECT	2.2MF	20%	50V
C610	1-164-159-11	CERAMIC	0.1MF		50V
C611	1-136-165-00	FILM	0.1MF	5%	50V

Ref.No.	Part No.	Description			
C612	1-136-165-00	FILM	0.1MF	5%	50V
C613	1-126-101-11	ELECT	100MF	20%	10V
C614	1-164-159-11	CERAMIC	0.1MF		50V
C615	1-126-101-11	ELECT	100MF	20%	10V
C616	1-164-159-11	CERAMIC	0.1MF		50V
C617	1-126-101-11	ELECT	100MF	20%	10V
C618	1-164-159-11	CERAMIC	0.1MF		50V
C619	1-126-101-11	ELECT	100MF	20%	10V
C620	1-164-159-11	CERAMIC	0.1MF		50V
C621	1-164-159-11	CERAMIC	0.1MF		50V
C622	1-126-101-11	ELECT	100MF	20%	10V
C623	1-164-159-11	CERAMIC	0.1MF		50V
C624	1-107-210-00	MICA	22PF	5%	500V
C625	1-107-210-00	MICA	22PF	5%	500V
C626	1-136-173-00	FILM	0.47MF	5%	50V
C627	1-164-159-11	CERAMIC	0.1MF		50V
C628	1-164-159-11	CERAMIC	0.1MF		50V
C629	1-126-101-11	ELECT	100MF	20%	10V
C630	1-130-481-00	MYLAR	0.0068MF	5%	50V
C631	1-130-487-00	MYLAR	0.022MF	5%	50V
C632	1-162-207-31	CERAMIC	22PF	5%	50V
C633	1-162-199-31	CERAMIC	10PF	5%	50V
C634	1-162-207-31	CERAMIC	22PF	5%	50V
C635	1-162-306-11	CERAMIC	0.01MF	20%	16V
C636	1-123-380-00	ELECT	1MF	20%	50V
C637	1-162-193-31	CERAMIC	3.3PF	10%	50V
C638	1-164-159-11	CERAMIC	0.1MF		50V
C639	1-162-306-11	CERAMIC	0.01MF	20%	16V
C640	1-123-380-00	ELECT	1MF	20%	50V
C641	1-162-294-31	CERAMIC	0.001MF	10%	50V
C642	1-126-059-11	ELECT	10MF	20%	50V
C643	1-126-059-11	ELECT	10MF	20%	50V
C644	1-164-159-11	CERAMIC	0.1MF		50V
C646	1-136-165-00	FILM	0.1MF	5%	50V
C647	1-136-165-00	FILM	0.1MF	5%	50V
C648	1-126-101-11	ELECT	100MF	20%	10V
C649	1-126-101-11	ELECT	100MF	20%	10V
C650	1-164-159-11	CERAMIC	0.1MF		50V
C651	1-124-997-11	ELECT	470MF	20%	10V
C652	1-124-997-11	ELECT	470MF	20%	10V
C653	1-124-997-11	ELECT	470MF	20%	10V
C654	1-101-004-00	CERAMIC	0.01MF		50V
C655	1-101-004-00	CERAMIC	0.01MF		50V
C660	1-162-199-31	CERAMIC	10PF	5%	50V
C661	1-162-206-31	CERAMIC	20PF	5%	50V
C701	1-130-467-00	MYLAR	470PF	5%	50V
C702	1-162-286-31	CERAMIC	220PF	10%	50V
C703	1-130-481-00	MYLAR	0.0068MF	5%	50V
C704	1-130-483-00	MYLAR	0.01MF	5%	50V
C705	1-124-910-11	ELECT	47MF	20%	50V
C706	1-130-472-00	MYLAR	0.0012MF	5%	50V
C708	1-110-339-11	MYLAR	220PF	5%	50V
C751	1-130-467-00	MYLAR	470PF	5%	50V
C752	1-162-286-31	CERAMIC	220PF	10%	50V
C753	1-130-481-00	MYLAR	0.0068MF	5%	50V
C754	1-130-483-00	MYLAR	0.01MF	5%	50V
C755	1-124-910-11	ELECT	47MF	20%	50V

Note:

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description
C756	1-130-472-00	MYLAR 0.0012MF 5% 50V
C758	1-110-339-11	MYLAR 220PF 5% 50V
C801	1-136-165-00	FILM 0.1MF 5% 50V
C802	1-126-059-11	ELECT 10MF 20% 50V
C803	1-136-165-00	FILM 0.1MF 5% 50V
C804	1-136-165-00	FILM 0.1MF 5% 50V
C805	1-126-335-11	ELECT 220MF 20% 10V
C806	1-123-380-00	ELECT 1MF 20% 50V
C807	1-123-330-00	ELECT 22MF 20% 16V
C808	1-162-306-11	CERAMIC 0.01MF 20% 16V
C809	1-136-165-00	FILM 0.1MF 5% 50V
C810	1-136-165-00	FILM 0.1MF 5% 50V
C901	△1-161-741-00	(EXCEPT Canadian) ...CERAMIC 0.001MF 10% 400V
C902	1-136-153-00	(West Germany)...FILM 0.01MF 5% 50V
C903	1-136-153-00	(West Germany)...FILM 0.01MF 5% 50V
C904	1-102-978-00	(Canadian, West Germany) ...CERAMIC 220PF 5% 50V
C910	1-102-978-00	(Canadian, West Germany) ...CERAMIC 220PF 5% 50V
C911	1-102-978-00	(Canadian, West Germany) ...CERAMIC 220PF 5% 50V
C912	1-102-978-00	(Canadian, West Germany) ...CERAMIC 220PF 5% 50V
C913	1-102-978-00	(Canadian, West Germany) ...CERAMIC 220PF 5% 50V
C952	1-136-153-00	(West Germany)...FILM 0.01MF 5% 50V
C953	1-136-153-00	(West Germany)...FILM 0.01MF 5% 50V
C954	1-102-978-00	(Canadian, West Germany) ...CERAMIC 220PF 5% 50V
C1000	1-161-379-00	CERAMIC 0.01MF 20% 25V
CN1	*1-561-651-00	SOCKET, CONNECTOR 7P
CN2	*1-561-651-00	SOCKET, CONNECTOR 7P
CN3	1-568-118-11	SOCKET, CONNECTOR 16P
CN4	*1-562-334-00	SOCKET, CONNECTOR 10P
CN5	*1-561-651-00	SOCKET, CONNECTOR 7P
CN6	1-568-203-11	PIN, CONNECTOR (PC BOARD) 11P
CN7	1-568-203-11	PIN, CONNECTOR (PC BOARD) 11P
CN8	*1-563-381-11	SOCKET, CONNECTOR 11P
CN9	*1-566-451-11	(EXCEPT West Germany) ...HOUSING, CONNECTOR 3P
CN10	*1-563-381-11	SOCKET, CONNECTOR 11P
CN11	1-568-117-11	SOCKET, CONNECTOR 14P
CNJ501A	△1-540-062-31	(Canadian)...OUTLET, AC (POLAR)
CNJ605	1-560-944-00	PIN, CONNECTOR 7P
CNJ802*	1-565-484-11	CONNECTOR, BOARD TO BOARD 8P
CNJ803*	1-565-483-11	CONNECTOR, BOARD TO BOARD 7P
CNP601*	1-564-340-00	PIN, CONNECTOR 6P
CNP602*	1-564-340-61	PIN, CONNECTOR 6P
CNP603*	1-564-337-71	PIN, CONNECTOR 3P
CNP604*	1-508-694-00	CONNECTOR PIN 8P
CP1	*1-560-532-00	PIN, CONNECTOR 7P
CP2	*1-560-532-00	PIN, CONNECTOR 7P
CP3-A	*1-560-532-00	PIN, CONNECTOR 7P
CP3-B	*1-568-204-11	PIN, CONNECTOR (PC BOARD) 16P
CP4	*1-568-202-11	PIN, CONNECTOR (PC BOARD) 10P
CP5	1-568-120-11	PIN, CONNECTOR (PC BOARD) 7P
CP6	1-568-120-11	PIN, CONNECTOR (PC BOARD) 7P
D201	8-719-912-20	DIODE 1SS120
D202	8-719-912-20	DIODE 1SS120
D203	8-719-303-00	LED SEL2510C (POWER)

Ref.No.	Part No.	Description
D204	8-719-303-00	LED SEL2510C (POWER)
D205	8-719-303-00	LED SEL2510C (POWER)
D206	8-719-302-23	LED SEL2213C-C-TP (POWER)
D207	8-719-302-23	LED SEL2213C-C-TP (POWER)
D208	8-719-301-52	LED SEL2810A-C (SOURCE DIRECT)
D209	8-719-301-52	LED SEL2810A-C (MUTING -20dB)
D210	8-719-301-52	LED SEL2810A-C (ANALOG)
D211	8-719-301-52	LED SEL2810A-C (DIGITAL)
D212	8-719-303-00	LED SEL2510C (48kHz)
D213	8-719-303-00	DIODE SEL2510C (44kHz)
D214	8-719-303-00	DIODE SEL2510C (32kHz)
D215	8-719-912-20	DIODE 1SS120
D216	8-719-912-20	DIODE 1SS120
D301	8-719-230-02	DIODE 30DF2
D302	8-719-230-02	DIODE 30DF2
D303	8-719-230-02	DIODE 30DF2
D304	8-719-230-02	DIODE 30DF2
D305	8-719-200-82	DIODE 11ES2
D306	8-719-200-82	DIODE 11ES2
D307	8-719-200-82	DIODE 11ES2
D308	8-719-200-82	DIODE 11ES2
D309	8-719-200-82	DIODE 11ES2
D310	8-719-200-82	DIODE 11ES2
D311	8-719-200-82	DIODE 11ES2
D312	8-719-912-20	DIODE 1SS120
D313	8-719-912-20	DIODE 1SS120
D314	8-719-912-20	DIODE 1SS120
D315	8-719-200-77	DIODE 10E2N
D316	8-719-200-77	DIODE 10E2N
D317	8-719-200-77	DIODE 10E2N
D318	8-719-200-77	DIODE 10E2N
D319	8-719-912-20	DIODE 1SS120
D320	8-719-912-20	DIODE 1SS120
D362	8-719-912-20	DIODE 1SS120
D363	8-719-912-20	DIODE 1SS120
D364	8-719-912-20	DIODE 1SS120
D401	8-719-000-84	DIODE UZL-7M1
D603	8-719-912-20	DIODE 1SS120
D604	8-719-123-78	DIODE 1SS97-2
D605	8-719-903-27	DIODE 1SS168
D606	8-719-901-59	DIODE KV1320
D607	8-719-107-94	DIODE 1SS202-1
D608	8-719-107-94	DIODE 1SS202-1
D610	8-719-912-20	DIODE 1SS120
D611	8-719-912-20	DIODE 1SS120
EH1	*1-564-509-11	PLUG, CONNECTOR 6P
EH2	*1-564-508-11	PLUG, CONNECTOR 5P
EH3	*1-564-508-11	PLUG, CONNECTOR 5P
EH4	*1-564-511-11	PLUG, CONNECTOR 8P
EH401	*1-564-506-11	(West Germany)...PLUG, CONNECTOR 3P
EH701	*1-564-506-11	PLUG, CONNECTOR 3P
F501	△1-532-510-11	(Canadian)...FUSE, GLASE-TUBE (8A)
F901	△1-532-350-00	(EXCEPT Canadian)...FUSE, TIME-LAG(4A)
IC301	8-749-921-87	IC STK3102N-MK3
IC302	8-759-111-68	IC UPC1237HA
IC401	8-759-981-96	IC RC4560D

Note:
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Note:
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Ref.No.	Part No.	Description
IC402	8-759-604-34	IC M5F7815L
IC403	8-759-604-52	IC M5F7915L
IC601	8-759-994-60	IC CXD2900Q
IC602	8-752-337-09	IC CXD2554P
IC603	8-752-335-51	IC CXD2552Q-1
IC604	8-759-916-46	IC SN74HC139N
IC605	8-759-013-39	IC MC4044M
IC606	8-759-242-57	IC TC74HC4020AF
IC607	8-759-233-64	IC TC74HC04AF
IC608	8-759-917-18	IC SN74HCU04N
IC609	8-759-604-35	IC M5F78M05L
IC610	8-759-982-52	IC RC79M05FA
IC611	8-719-902-56	DIODE PC817
IC612	8-752-334-77	IC CXD2553S
IC701	8-759-982-03	IC RC5532DD
IC751	8-759-982-03	IC RC5532DD
IC801	8-759-977-72	IC GPIF31R
IC802	8-759-977-72	IC GPIF31R
IC803	8-759-977-71	IC GPIF31T
IC804	8-759-917-18	IC SN74HCU04N
IC805	8-759-921-17	IC SN74HC153N
IC806	8-759-604-84	IC M5F7806L
J101	*1-580-027-11	JACK, PIN 6P (REC OUT/CD/TUNER)
J102	*1-580-028-11	JACK, PIN 6P (IN/REC OUT/IN)
J401	1-568-250-21	JACK, PIN 2P (PHONO)
J501	1-507-863-51	JACK, LARGE TYPE (HEADPHONES)
J801	1-568-249-21	JACK, PIN 1P (COAXIAL IN)
L301	1-428-133-11	COIL, AIR-CORE
L351	1-428-133-11	COIL, AIR-CORE
L401	1-424-397-11	(West Germany)...COIL, CHOKE 200UH
L402	1-424-397-11	(West Germany)...COIL, CHOKE 200UH
L451	1-424-397-11	(West Germany)...COIL, CHOKE 200UH
L452	1-424-397-11	(West Germany)...COIL, CHOKE 200UH
L601	1-410-324-11	INDUCTOR 4.7UH
L602	1-410-324-11	INDUCTOR 4.7UH
L603	1-410-324-11	INDUCTOR 4.7UH
L604	1-410-324-11	INDUCTOR 4.7UH
L605	1-410-509-11	INDUCTOR 10UH
L606	1-460-042-11	COIL (WITH CORE)
L607	1-460-042-11	COIL (WITH CORE)
L608	1-408-096-00	INDUCTOR 470UH
L610	1-410-324-11	INDUCTOR 4.7UH
L611	1-410-396-41	FERRITE BEAD INDUCTOR
L612	1-410-396-41	FERRITE BEAD INDUCTOR
L801	1-410-324-11	INDUCTOR 4.7UH
L802	1-410-324-11	INDUCTOR 4.7UH
Q201	8-729-140-96	TRANSISTOR 2SD774-34
Q202	8-729-194-57	TRANSISTOR 2SC945-P
Q203	8-729-141-03	TRANSISTOR 2SA733-QP
Q204	8-729-141-03	TRANSISTOR 2SA733-QP
Q205	8-729-141-26	TRANSISTOR 2SC3622A-LK
Q255	8-729-141-26	TRANSISTOR 2SC3622A-LK
Q301	8-729-203-45	TRANSISTOR 2SC3423-0
Q302	8-729-107-53	TRANSISTOR 2SC2275A
Q303	8-729-190-53	TRANSISTOR 2SA985A
Q304	8-729-300-11	TRANSISTOR 2SC2922-0
Q305	8-729-300-10	TRANSISTOR 2SA1216-0
Q306	8-729-108-14	TRANSISTOR 2SA988-F

Ref.No.	Part No.	Description
Q351	8-729-203-45	TRANSISTOR 2SC3423-0
Q352	8-729-107-54	TRANSISTOR 2SC2275A
Q353	8-729-190-53	TRANSISTOR 2SA985A
Q354	8-729-300-11	TRANSISTOR 2SC2922-0
Q355	8-729-300-10	TRANSISTOR 2SA1216-0
Q356	8-729-108-14	TRANSISTOR 2SA988-F
Q401	8-729-354-52	TRANSISTOR 2SC2545
Q402	8-729-354-52	TRANSISTOR 2SC2545
Q451	8-729-354-52	TRANSISTOR 2SC2545
Q452	8-729-354-52	TRANSISTOR 2SC2545
Q601	8-729-115-13	TRANSISTOR BN1F4M
Q602	8-729-900-36	TRANSISTOR DTC124ES
Q603	8-729-115-13	TRANSISTOR BN1F4M
Q604	8-729-115-13	TRANSISTOR BN1F4M
Q605	8-729-900-61	TRANSISTOR DTA114ES
Q606	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q607	8-729-900-61	TRANSISTOR DTA114ES
Q608	8-729-200-56	TRANSISTOR 2SK241GR
Q609	8-729-200-56	TRANSISTOR 2SK241GR
Q610	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q611	8-729-194-57	TRANSISTOR 2SC945-P
Q701	8-729-900-36	TRANSISTOR DTC124ES
Q702	8-729-141-26	TRANSISTOR 2SC3622A-LK
Q703	8-729-201-05	TRANSISTOR 2SC2878B
Q704	8-729-115-13	TRANSISTOR BN1F4M
Q751	8-729-900-36	TRANSISTOR DTC124ES
Q752	8-729-141-26	TRANSISTOR 2SC3622A-LK
Q753	8-729-201-05	TRANSISTOR 2SC2878B
Q754	8-729-115-13	TRANSISTOR BN1F4M
R000	1-247-725-11	CARBON 10K 5% 1/4W
R101	1-246-545-00	CARBON 1M 5% 1/4W
R102	1-246-545-00	CARBON 1M 5% 1/4W
R103	1-246-545-00	CARBON 1M 5% 1/4W
R104	1-246-545-00	CARBON 1M 5% 1/4W
R105	1-247-713-11	CARBON 1K 5% 1/4W
R106	1-249-417-11	CARBON 1K 5% 1/4W
R111	1-249-417-11	(West Germany)...CARBON 1K 5% 1/4W
R112	1-249-417-11	(West Germany)...CARBON 1K 5% 1/4W
R113	1-249-417-11	(West Germany)...CARBON 1K 5% 1/4W
R114	1-249-417-11	(West Germany)...CARBON 1K 5% 1/4W
R151	1-246-545-00	CARBON 1M 5% 1/4W
R152	1-246-545-00	CARBON 1M 5% 1/4W
R153	1-246-545-00	CARBON 1M 5% 1/4W
R154	1-246-545-00	CARBON 1M 5% 1/4W
R155	1-247-713-11	CARBON 1K 5% 1/4W
R156	1-249-417-11	CARBON 1K 5% 1/4W
R161	1-249-417-11	(West Germany)...CARBON 1K 5% 1/4W
R162	1-249-417-11	(West Germany)...CARBON 1K 5% 1/4W
R163	1-249-417-11	(West Germany)...CARBON 1K 5% 1/4W
R164	1-249-417-11	(West Germany)...CARBON 1K 5% 1/4W
R202	1-247-700-11	CARBON 100 5% 1/4W
R203	1-247-132-00	CARBON 1.1K 5% 1/4W
R204	1-247-718-11	CARBON 2.7K 5% 1/4W
R205	1-249-753-15	CARBON 4.7M 5% 1/4W
R206	1-249-753-15	CARBON 4.7M 5% 1/4W
R208	1-247-162-00	CARBON 20K 5% 1/4W

Ref.No.	Part No.	Description				
R209	1-247-718-11	CARBON	2.7K	5%	1/4W	
R212	1-249-465-11	CARBON	47K	5%	1/4W	
R213	1-247-152-00	CARBON	8.2K	5%	1/4W	
R214	1-247-693-11	CARBON	27	5%	1/4W	
R215	1-247-754-11	CARBON	1.5K	5%	1/2W	
R216	1-247-754-11	CARBON	1.5K	5%	1/2W	
R217	1-247-750-11	CARBON	680	5%	1/2W	
R218	1-249-462-11	CARBON	22K	5%	1/4W	
R219	1-249-465-11	CARBON	47K	5%	1/4W	
R220	1-247-749-11	CARBON	560	5%	1/2W	
R221	1-247-717-11	CARBON	2.2K	5%	1/4W	
R222	1-247-725-11	CARBON	10K	5%	1/4W	
R223	1-249-465-11	CARBON	47K	5%	1/4W	
R224	1-247-721-11	CARBON	4.7K	5%	1/4W	
R225	△.1-247-743-11	CARBON	220	5%	1/2W	F
R226	△.1-215-892-11	METAL OXIDE	1K	5%	2W	F
R227	△.1-215-892-11	METAL OXIDE	1K	5%	2W	F
R229	1-247-721-11	CARBON	4.7K	5%	1/4W	
R230	1-247-118-00	CARBON	300	5%	1/4W	
R231	1-247-702-11	CARBON	150	5%	1/4W	
R233	1-247-713-11	CARBON	1K	5%	1/4W	
R252	1-247-700-11	CARBON	100	5%	1/4W	
R253	1-247-132-00	CARBON	1.1K	5%	1/4W	
R254	1-247-718-11	CARBON	2.7K	5%	1/4W	
R255	1-249-753-15	CARBON	4.7M	5%	1/4W	
R256	1-249-753-15	CARBON	4.7M	5%	1/4W	
R258	1-247-162-00	CARBON	20K	5%	1/4W	
R259	1-247-718-11	CARBON	2.7K	5%	1/4W	
R262	1-249-465-11	CARBON	47K	5%	1/4W	
R263	1-247-152-00	CARBON	8.2K	5%	1/4W	
R279	1-247-721-11	CARBON	4.7K	5%	1/4W	
R283	1-247-713-11	CARBON	1K	5%	1/4W	
R301	1-247-713-11	CARBON	1K	5%	1/4W	
R302	1-249-469-11	CARBON	100K	5%	1/4W	
R303	1-249-668-11	CARBON	620	5%	1/2W	
R304	△.1-249-417-11	CARBON	1K	5%	1/4W	F
R305	△.1-212-895-00	FUSIBLE	390	5%	1/4W	F
R306	△.1-212-990-00	FUSIBLE	220	5%	1/2W	F
R307	△.1-212-950-00	FUSIBLE	4.7	5%	1/2W	F
R308	△.1-212-950-00	FUSIBLE	4.7	5%	1/2W	F
R309	1-217-611-00	RES, METAL PLATE 0.1				
R310	1-217-611-00	RES, METAL PLATE 0.1				
R311	△.1-247-717-11	CARBON	2.2K	5%	1/4W	F
R312	1-249-460-11	CARBON	15K	5%	1/4W	
R313	△.1-212-962-00	FUSIBLE	15	5%	1/2W	F
R314	△.1-212-962-00	FUSIBLE	15	5%	1/2W	F
R315	1-247-891-00	CARBON	330K	5%	1/4W	
R316	1-247-725-11	CARBON	10K	5%	1/4W	
R317	1-247-887-00	CARBON	220K	5%	1/4W	
R318	1-247-881-00	CARBON	120K	5%	1/4W	
R319	△.1-249-432-11	CARBON	18K	5%	1/4W	F
R320	1-247-721-11	CARBON	4.7K	5%	1/4W	
R321	1-249-467-11	CARBON	68K	5%	1/4W	
R323	△.1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
R324	1-247-727-11	CARBON	10	5%	1/2W	
R325	△.1-212-998-00	FUSIBLE	470	5%	1/2W	F
R326	1-249-721-11	CARBON	100K	5%	1/2W	

Ref.No.	Part No.	Description				
R327	1-247-713-11	(EXCEPT West Germany) ...CARBON	1K	5%	1/4W	
R327	1-247-717-11	(West Germany)...CARBON	2.2K	5%	1/4W	
R351	1-247-713-11	CARBON	1K	5%	1/4W	
R352	1-249-469-11	CARBON	100K	5%	1/4W	
R353	1-249-668-11	CARBON	620	5%	1/2W	
R354	△.1-249-417-11	CARBON	1K	5%	1/4W	F
R355	△.1-212-895-00	FUSIBLE	390	5%	1/4W	F
R356	△.1-212-990-00	FUSIBLE	220	5%	1/2W	F
R357	△.1-212-950-00	FUSIBLE	4.7	5%	1/2W	F
R358	△.1-212-950-00	FUSIBLE	4.7	5%	1/2W	F
R359	1-217-611-00	RES, METAL PLATE 0.1				
R360	1-217-611-00	RES, METAL PLATE 0.1				
R361	△.1-247-717-11	CARBON	2.2K	5%	1/4W	F
R362	1-249-460-11	CARBON	15K	5%	1/4W	
R363	△.1-212-962-00	FUSIBLE	15	5%	1/2W	F
R364	△.1-212-962-00	FUSIBLE	15	5%	1/2W	F
R365	1-247-891-00	CARBON	330K	5%	1/4W	
R374	1-247-727-11	CARBON	10	5%	1/2W	
R375	△.1-212-998-00	FUSIBLE	470	5%	1/2W	F
R376	1-249-721-11	CARBON	100K	5%	1/2W	
R377	1-247-713-11	(EXCEPT West Germany) ...CARBON	1K	5%	1/4W	
R377	1-247-717-11	(West Germany)...CARBON	2.2K	5%	1/4W	
R401	△.1-216-459-00	METAL OXIDE	2.7K	5%	2W	F
R402	△.1-216-459-00	METAL OXIDE	2.7K	5%	2W	F
R405	1-247-706-11	(EXCEPT West Germany) ...CARBON	330	5%	1/4W	
R406	1-249-469-11	CARBON	100K	5%	1/4W	
R407	1-247-700-11	CARBON	100	5%	1/4W	
R408	1-249-469-11	CARBON	100K	5%	1/4W	
R409	1-247-710-11	CARBON	560	5%	1/4W	
R410	1-247-710-11	CARBON	560	5%	1/4W	
R411	1-247-725-11	CARBON	10K	5%	1/4W	
R412	1-249-484-11	CARBON	6.8	5%	1/2W	
R413	1-247-739-11	CARBON	100	5%	1/2W	
R414	1-247-138-00	CARBON	2K	5%	1/4W	
R415	1-249-542-11	CARBON	390	5%	1/4W	
R416	1-214-937-00	CARBON	1M	5%	1/2W	
R417	1-249-844-11	CARBON	56K	5%	1/2W	
R418	1-249-818-11	CARBON	4.7K	1%	1/2W	
R419	1-247-713-11	CARBON	1K	5%	1/4W	
R431	1-259-428-11	(West Germany)...CARBON	1K	5%	1/6W	
R432	1-259-428-11	(West Germany)...CARBON	1K	5%	1/6W	
R455	1-247-706-11	(EXCEPT West Germany) ...CARBON	330	5%	1/4W	
R456	1-249-469-11	CARBON	100K	5%	1/4W	
R457	1-247-700-11	CARBON	100	5%	1/4W	
R458	1-249-469-11	CARBON	100K	5%	1/4W	
R459	1-247-710-11	CARBON	560	5%	1/4W	
R460	1-247-710-11	CARBON	560	5%	1/4W	
R461	1-247-725-11	CARBON	10K	5%	1/4W	
R462	1-249-484-11	CARBON	6.8	5%	1/2W	
R463	1-247-739-11	CARBON	100	5%	1/2W	
R465	1-249-542-11	CARBON	390	5%	1/4W	
R466	1-214-937-00	CARBON	1M	5%	1/2W	
R467	1-249-844-11	CARBON	56K	5%	1/2W	
R468	1-249-818-11	CARBON	4.7K	1%	1/2W	

Note:
The components identified by mark **△** or dotted line with mark **△** are critical for safety. Replace only with part number specified.

Note:
Les composants identifiés par une marque **△** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description					
R469	1-247-713-11	CARBON	1K	5%	1/4W		
R481	1-259-428-11	(West Germany)...CARBON	1K	5%	1/6W		
R482	1-259-428-11	(West Germany)...CARBON	1K	5%	1/6W		
R601	1-259-468-11	CARBON	47K	5%	1/6W		
R602	1-259-452-11	CARBON	10K	5%	1/6W		
R603	1-259-452-11	CARBON	10K	5%	1/6W		
R604	1-259-460-11	CARBON	22K	5%	1/6W		
R605	1-259-468-11	CARBON	47K	5%	1/6W		
R606	1-259-452-11	CARBON	10K	5%	1/6W		
R607	1-259-460-11	CARBON	22K	5%	1/6W		
R608	1-259-492-11	CARBON	470K	5%	1/6W		
R609	1-259-452-11	CARBON	10K	5%	1/6W		
R610	1-259-420-11	CARBON	470	5%	1/6W		
R611	1-259-420-11	CARBON	470	5%	1/6W		
R612	1-259-420-11	CARBON	470	5%	1/6W		
R613	1-259-404-11	CARBON	100	5%	1/6W		
R614	1-259-459-11	CARBON	20K	5%	1/6W		
R615	1-259-428-11	CARBON	1K	5%	1/6W		
R616	1-259-436-11	CARBON	2.2K	5%	1/6W		
R617	1-259-404-11	CARBON	100	5%	1/6W		
R618	1-259-452-11	CARBON	10K	5%	1/6W		
R619	1-259-428-11	CARBON	1K	5%	1/6W		
R620	1-259-416-11	CARBON	330	5%	1/6W		
R621	1-259-416-11	CARBON	330	5%	1/6W		
R622	1-259-420-11	CARBON	470	5%	1/6W		
R623	1-259-416-11	CARBON	330	5%	1/6W		
R624	1-259-380-11	CARBON	10	5%	1/6W		
R626	1-259-452-11	CARBON	10K	5%	1/6W		
R627	1-259-444-11	CARBON	4.7K	5%	1/6W		
R628	1-259-444-11	CARBON	4.7K	5%	1/6W		
R629	1-259-456-11	CARBON	15K	5%	1/6W		
R630	1-259-428-11	CARBON	1K	5%	1/6W		
R631	1-259-428-11	CARBON	1K	5%	1/6W		
R632	1-259-428-11	CARBON	1K	5%	1/6W		
R633	1-259-500-11	CARBON	1M	5%	1/6W		
R634	1-259-440-11	CARBON	3.3K	5%	1/6W		
R635	1-259-392-11	CARBON	33	5%	1/6W		
R636	1-259-468-11	CARBON	47K	5%	1/6W		
R637	1-259-406-11	CARBON	120	5%	1/6W		
R638	1-259-420-11	CARBON	470	5%	1/6W		
R639	1-259-500-11	CARBON	1M	5%	1/6W		
R640	1-259-416-11	CARBON	330	5%	1/6W		
R641	1-259-416-11	CARBON	330	5%	1/6W		
R643	1-259-436-11	CARBON	2.2K	5%	1/6W		
R646	1-259-440-11	CARBON	3.3K	5%	1/6W		
R647	1-259-440-11	CARBON	3.3K	5%	1/6W		
R648	1-259-466-11	CARBON	39K	5%	1/6W		
R649	1-259-466-11	CARBON	39K	5%	1/6W		
R701	1-259-451-11	CARBON	9.1K	5%	1/6W		
R702	1-259-451-11	CARBON	9.1K	5%	1/6W		
R703	1-259-436-11	CARBON	2.2K	5%	1/6W		
R704	1-259-436-11	CARBON	2.2K	5%	1/6W		
R705	1-259-458-11	CARBON	18K	5%	1/6W		
R706	1-259-440-11	CARBON	3.3K	5%	1/6W		
R707	1-259-416-11	CARBON	330	5%	1/6W		
R708	1-259-432-11	CARBON	1.5K	5%	1/6W		
R709	1-259-432-11	CARBON	1.5K	5%	1/6W		
R710	1-259-488-11	CARBON	330K	5%	1/6W		
R711	1-259-404-11	CARBON	100	5%	1/6W		
R712	1-259-458-11	CARBON	18K	5%	1/6W		
R713	1-259-404-11	CARBON	100	5%	1/6W		
R714	1-259-440-11	CARBON	3.3K	5%	1/6W		
R715	1-249-391-11	CARBON	6.8	5%	1/4W		
R751	1-259-451-11	CARBON	9.1K	5%	1/6W		
R752	1-259-451-11	CARBON	9.1K	5%	1/6W		
R753	1-259-436-11	CARBON	2.2K	5%	1/6W		
R754	1-259-436-11	CARBON	2.2K	5%	1/6W		
R755	1-259-458-11	CARBON	18K	5%	1/6W		
R756	1-259-440-11	CARBON	3.3K	5%	1/6W		
R757	1-259-416-11	CARBON	330	5%	1/6W		
R758	1-259-432-11	CARBON	1.5K	5%	1/6W		
R759	1-259-432-11	CARBON	1.5K	5%	1/6W		
R760	1-259-488-11	CARBON	330K	5%	1/6W		
R761	1-259-404-11	CARBON	100	5%	1/6W		
R762	1-259-458-11	CARBON	18K	5%	1/6W		
R763	1-259-404-11	CARBON	100	5%	1/6W		
R764	1-259-440-11	CARBON	3.3K	5%	1/6W		
R765	1-249-391-11	CARBON	6.8	5%	1/4W		
R801	1-259-424-11	CARBON	680	5%	1/6W		
R802	1-259-401-11	CARBON	75	5%	1/6W		
R803	1-259-428-11	CARBON	1K	5%	1/6W		
R804	1-259-424-11	CARBON	680	5%	1/6W		
R805	1-259-424-11	CARBON	680	5%	1/6W		
R806	1-259-428-11	CARBON	1K	5%	1/6W		
R807	1-259-428-11	CARBON	1K	5%	1/6W		
R808	1-259-500-11	CARBON	1M	5%	1/6W		
R809	1-259-428-11	CARBON	1K	5%	1/6W		
R902	1-247-727-11	(West Germany)...CARBON	10	5%	1/2W		
R903	1-247-727-11	(West Germany)...CARBON	10	5%	1/2W		
R952	1-247-727-11	(West Germany)...CARBON	10	5%	1/2W		
R953	1-247-727-11	(West Germany)...CARBON	10	5%	1/2W		

Ref.No.	Part No.	Description
RT301	1-237-455-11	RES, ADJ, CARBON 500 (BIAS L)
RT351	1-237-455-11	RES, ADJ, CARBON 500 (BIAS R)
RV101	1-241-162-11	RES, VAR, CARBON 250K/250K (BALANCE)
RV102	1-241-163-11	RES, VAR, CARBON 125K (TREBLE)
RV103	1-241-164-11	RES, VAR, CARBON 260K (BASS)
RV104	1-241-165-11	RES, VAR, CARBON 40K/40K (ATTENUATOR)
RY301	1-515-676-11	RELAY
RY302	1-515-676-11	RELAY
S201	1-571-824-11	SWITCH, ROTARY (ANALOG-INPUT SELECTOR)
S202	1-571-821-11	SWITCH, ROTARY SLIDE (DIGITAL-INPUT SELECTOR)
S203	1-571-823-11	SWITCH, ROTARY SLIDE (REC OUT SELECTOR)
S204	1-571-828-11	SWITCH, PUSH (1 KEY)(SOURCE DIRECT)
S205	1-572-417-11	SWITCH, PUSH (2 KEY)(MUTING/SUBSONIC)
S206	1-571-822-11	SWITCH, ROTARY SLIDE (SPEAKERS)
S207	1-571-825-11	SWITCH, ROTARY (MODE)
S401	1-571-111-11	SWITCH, PUSH (1 KEY)(CARTRIDGE)
S501	△.1-554-920-11	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)
SCN7	*1-564-505-11	(West Germany)...PLUG, CONNECTOR 2P
T1	△.1-450-257-11	(Canadian).....TRANSFORMER, POWER
T1	△.1-450-258-11	(AE1,West Germany)...TRANSFORMER, POWER
T1	△.1-450-259-11	(AE2).....TRANSFORMER, POWER
T1	△.1-450-260-11	(UK).....TRANSFORMER, POWER
TM901	1-537-227-11	(AE2).....TERMINAL BOARD (SP)
TM901	1-537-228-11	(West Germany).....TERMINAL BOARD (SP)
TM901	1-537-235-11	(Canadian,AE1,UK)...TERMINAL BOARD (SP)
TP301	1-535-139-00	BASE POST 14MM (10MM PITCH) 2P
TP351	1-535-139-00	BASE POST 14MM (10MM PITCH) 2P
VH1	*1-564-104-00	PIN, CONNECTOR 3P
VH4	*1-564-321-00	(EXCEPT Canadian)...PIN, CONNECTOR 2P
VH5	*1-565-792-11	PIN, CONNECTOR 2P
VH6	*1-564-321-21	(EXCEPT Canadian)...PIN, CONNECTOR 2P
VH8	*1-564-241-00	PIN, CONNECTOR 4P
VH9	*1-564-321-11	(Canadian)...PIN, CONNECTOR 2P
VH10	*1-565-792-11	(Canadian)...PIN, CONNECTOR 2P
VH11	*1-564-321-11	(Canadian)...PIN, CONNECTOR 2P
VH12	1-564-320-00	PIN, CONNECTOR 2P
VH15	*1-565-792-11	PIN, CONNECTOR 2P
X601	1-577-269-11	VIBRATOR, CRYSTAL

ACCESSORY & PACKING MATERIAL

3-752-025-11	(Canadian,AE1,UK)....MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE)
3-752-025-41	(AEP,West Germany)...MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN)
*4-929-219-01	CUSHION
*4-941-755-01	INDIVIDUAL CARTON

Note:

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Note:

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